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3dcreative

Issue 055 March 2010



Interview
Julianna Kolakis



The Gallery
Petr Nasirov, Oliver Khalil, Rana Azeem & more!



Project Overview
"The Drawing Room"
by Mojtaba Shabanzadeh



FREE – Inside Look!
Digital Art Masters: Volume 4
Project Overview by Thibaut Milville

DOWNLOAD RESOURCES
- Free Environment Lighting Artist Scene & Textures

FANTASY ENVIRONMENT







Post Production Using Photoshop

In the fifth and final chapter of this tutorial series, **Richard Tilbury** will focus on adding all those final little details and further refining our image

Hard-Edge Gun Modeling

Cedric Seaut Character Modeling: Chapter 3 will show the steps used to create a Desert Eagle Handgun (Hard-Edge Max/Silo)

Lighting Solutions with V-Ray

V-Ray for 3ds Max: Chapter 4 by **Eric Ennis** will go over Vray lights and other lighting solutions available in Vray

Moonlit Environments

Environment Lighting: Outdoor Scene for 3DSMax + Mental Ray, 3DSMax + Vray, Cinema 4D and Maya + Mental Ray



Editorial

Hello and welcome to the March issue of 3DCreative, we hope you are all well and keen to pick up where we left of last month in the excellent tutorial series that we are currently running.

We continue to bring you interviews with the best in the business and this month we speak to the fantastic Julianna Kolakis. She talks to us about some of the exciting projects that she has worked on in the past, including her time working on the blockbuster Peter Jackson movie District 9. Julianna also talks to us about what it is like working in a male orientated industry, and gives us advice on how to progress in the industry.

We also bring you a making of this month from Mojtaba Shabanzadeh. He tells us how he created his excellent interior entitled The Drawing Room. Mojtaba walks us through his process from beginning to end, and shows us his how ensures that he has the correct scale and lighting to make his room look and feel real.

This month our gallery is full of exciting new artwork submitted by some of our readers, and this month we feature artwork by Sven Juhlin, Petr Nasirov, Jack Zhang, Valentin Yovchev and many more.

So on to our tutorials and this month we continue some of the fantastic series that we have been running, starting with the excellent Cédric Seaut. We bring you the next installment of his excellent character modeling tutorial this month looking at creating a handgun. Cedric talks us through some of the aspects of hard edge modeling and takes us step by step through creating a handgun so that we could all have a shot at it, sorry excuse the pun I can't help myself.

Eric Ennis continues his series looking in detail at the capabilities of Vray this month concentrating on VRay Lights. Eric goes into detail and shows us all the different settings that we can use to give our piece of art authentic lighting, and shows us how we can create lighting to reflect any environment or situation by using the wide range of options that are available with Vray.


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Free Stuff!
Wherever you see this symbol, click it to download resources, extras & even movies!



On the subject of lighting we continue our environment lighting series and this month our artists talk us through creating a moonlit scene. Sadly last month we were unable to bring you the second part of our tutorial in Maya, but as promised this month we have a Maya double bill and Luciano Iurino has kindly stepped in to prepare this for us. Luciano has tackled last month's topic creating a Sunrise/ Sunset and joins the rest of our fantastic environment lighting artist in creating a moonlit scene. As always we have Andrew Finch in 3DS Max and Mental Ray, Andrzej Sykut in 3DS Max and Vray, Fredi Voss in Cinema 4D and welcome our new addition Luciano Iurino in Maya.

This month sees the final part of Richard Tilburys tutorial Creating a Fantasy Scene looking mainly at photography and post production.

So as you can see we have a lot in store for you this month, we hope you enjoy.

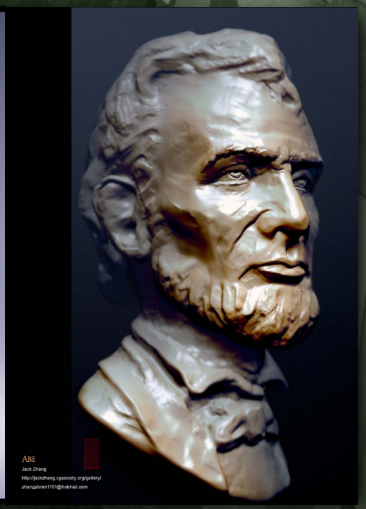


Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!









Setting up your PDF reader

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: **DOWNLOAD!**

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. Open the magazine in Reader;
2. Go to the View menu, then Page Display;
3. Select Two-up Continuous, making sure that Show Cover Page is also selected.

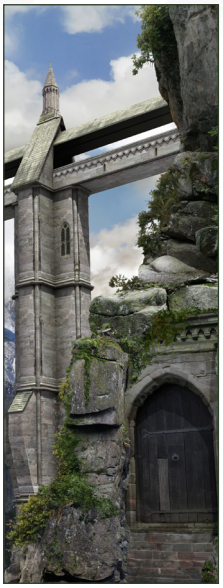
That's it!

Contributing Artists

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in 3DCreative magazine, please contact: simon@3dtotal.com

Environment Lighting Outdoor Scene





Chapter 3 of our popular Environment Lighting tutorial series with a great lineup of talented artists: **Andrew Finch** (**3ds Max + MR**), **Andrzej Sykut** (**3ds Max + Vray**), **Luciano Iurino** (**Maya**) and **Fredi Voss** (**Cinema 4D**).



Richard Tilbury

Has had a passion for drawing since being a couple of feet tall. He studied fine art and was eventually led into the realm of computers several years ago. His brushes have slowly been dissolving in white spirit since the late 90s, and now his graphics tablet has become their successor. He still sketches regularly, balancing his time between 2D and 3D.

www.richardtilburyart.com | rich@3dtotal.com



Andrew Finch

Aged 27 and living in the great city of Birmingham in the U.K., Andrew has a degree in 3D Animation which inspired his passion for environment art. He now works as an environment artist at Rebellion, and says, "Working in the games industry is exciting: you never know what the next project will be and there's always something new to learn. This helps to keep you creative and grow as an artist." afinchy@googlemail.com





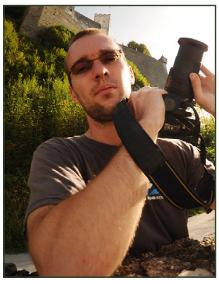


Fredi Voss

Living and working as a fine artist and 3D freelancer in Germany, Fredi – a.k.a. rollmops – can often be found on the various web communities, where he has also won several awards. His client list includes Audi and Siemens, and he also has as Animago Award and a Fine Art degree under his belt!

http://fredivoss.cgsociety.org/gallery/

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Andrzej Sykut

When it comes to CG, Andrzej is a bit of a generalist, but lighting is where the fun is for him – that, and post-production/compositing. He currently works at Platige Image, and also does some freelancing as well. While he enjoys his work, it's also time-consuming, so he tries to get away from the computer as often as possible to enjoy the world. http://azazel.carbonmade.com/

eltazaar@gmail.com







Luciano Iurino

Started back in 1994 with 3d Studio on MS-Dos as a modeller/texture artist. In 2001 he co-founded PM Studios (an Italian videogame developer) with some friends, and still works for it as the lead 3D artist. He also works as a freelancer for different magazines, web-portals, GFX and videogame companies, and recently he left the 3ds Max environment to move on to XSI.

iuri@pmstudios.it | http://www.pmstudios.it

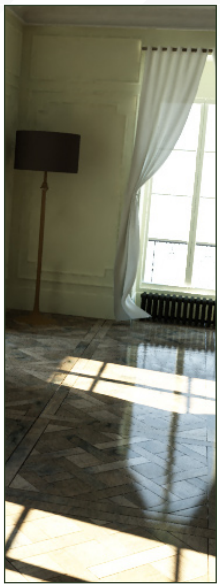


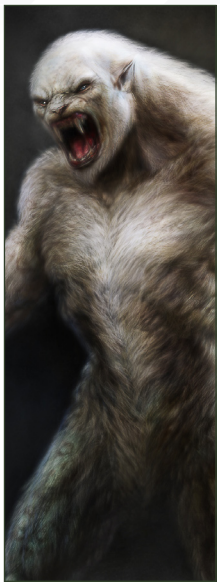
ERIC ENNIS

26-year old self-taught digital artist in Paris, France, Eric saw *Tron* as a child and decided then that 3D was the way to go! He began learning LightWave 4, later moving onto 3ds Max 3. He started out in videogames, working for various companies in Paris, and then moved to England to join Realtime UK, before joining BUF Studio in Paris.

www.eric-ennis.com

contact@eric-ennis.com





JULIANNA KOLAKIS



Julianna started her career as a traditional painter, and later worked as a graphic artist. Afterwards, she graduated from Vancouver Film School's 3D Animation and Visual Effects program and became a 3D character Artist, in the entertainment industry. Her recent work can be seen in films such as District 9 and Twilight Eclipse,

http://www.kolakis-studio.com/

jkolakis@hotmail.com



MOJTABA SHABANZADEH

My name is Mojtaba. I am 23 years old. I have been using 3ds Max for about 8 years in my free time and have been using it now professionally for about two years, in this period have learnt to design characters and scenes. Over the years I have used the training section of the 3DTotal site and found it very helpful. Thanks

fixed.mail2009@gmail.com



WOULD YOU LIKE TO CONTRIBUTE TO 3DCREATIVE OR 2DARTIST MAGAZINE?

We are always looking for tutorial artists, gallery submissions, potential interviewees, 'making of' writers, and more. For more information, please send a link to your portfolio, or send examples, to: simon@3dtotal.com

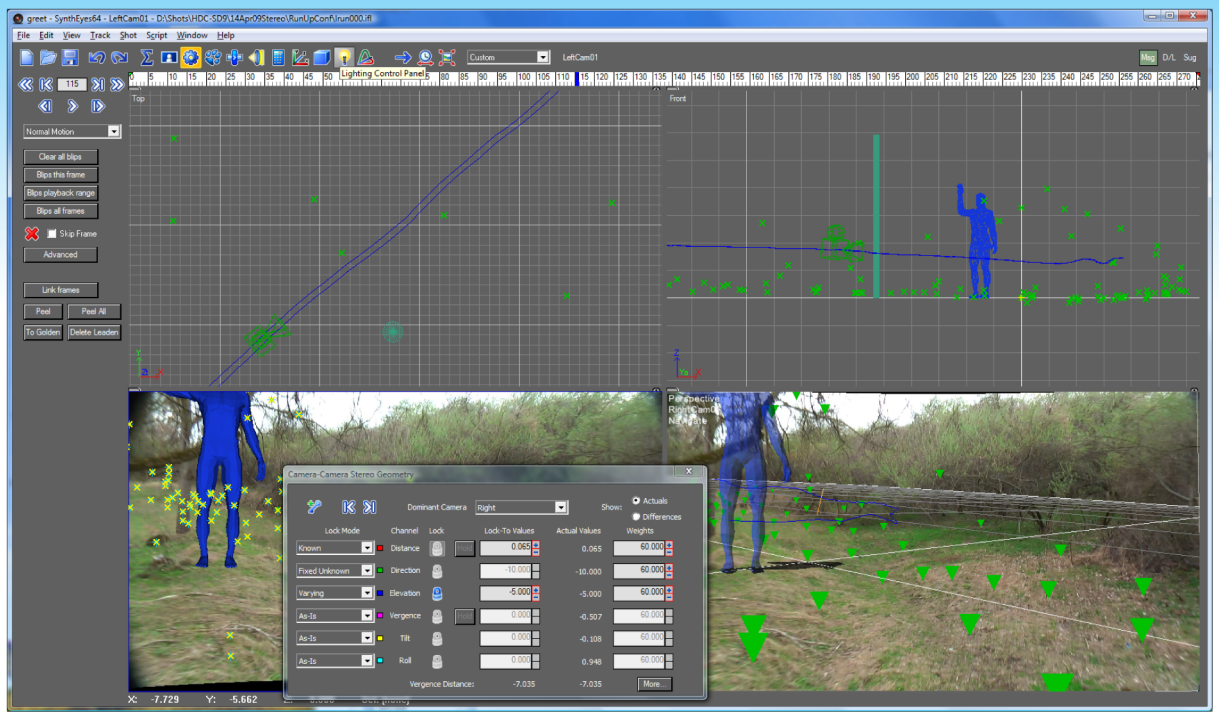


Julianna Kolakis

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Julianna Kolakis

Julianna Kolakis began her career as a painter but after a spell as an illustrator and graphic designer she attended the Vancouver Film School. After graduating she moved onto a successful career within the film and entertainment industry, working as both a 3d artist and concept artist with a dedication to character design.



"As time progresses an artist connects to the industry they feel their art relates to."

An Interview with Julianna Kolakis



From looking at your website and list of credits it is clear that you have achieved a lot since your career began. Can you tell us a little about your rise to success and what prompted the jump into 3d?

Being an illustrator, I aimed for a job as a concept artist in the video game industry which proved to be extremely difficult after high school. I knew I needed to improve the overall quality of my portfolio and in order to learn more I started researching art schools. Nothing really stood out at the time, but some artists in the industry suggested learning 3D. I wanted to broaden my skill set and I knew that learning 3D would increase my ability to diversify in the artistic field. I attended open houses, but found Vancouver Film School's 3D Animation and Visual Effects course the most compelling. Being my best lead I took a chance with it and made arrangements to move to Vancouver.

At VFS I was so fortunate to have great instructors and such a magnitude of talent around me, especially in my class. We were able to combine our knowledge and expertise while bouncing off ideas- offering constructive critiques throughout the duration of creating our demo reels. The support helped me through my difficulties with learning 3d and I was encouraged to share my work online. I had no idea how integral networking/art sites would be to my career. I was getting my first freelance gigs online, most of them from The Aaron Sims Company. I started getting the opportunity to contribute to big projects and work for visual effects studios in Vancouver. My flexibility allowed me to work as a modeler, texture artist, and concept artist in film, while slowly building up my credentials. It's amazing how taking an alternate path lead me to the very thing I wanted to do from the beginning of my career.



Can you tell us a little about your time at the Aaron Sims Company and the types of jobs you were getting?

To summarize, I was helping Aaron with a variety of character related jobs in the film and video game industry. Many were in the early stages of pre-viz so work included everything from sketches and 3d designs to digital painting. I focused on a majority of quick conceptual models, texturing, rigging, posing and rendering



final images. Projects moved fast and always had diverse content I found refreshing and insightful. A lot of creative freedom was involved for free-styling models or loosely basing my work on other sketches. These sketches were often supplied by Aaron, or other amazing artists I had the opportunity to work with such as Joseph Pepe and Jerad Marantz.

"IT REALLY SHOWS AN ARTIST'S ABILITY TO TRANSLATE THEIR VISION AND CARRY IT THROUGH TO DIFFERENT MEDIUMS."

Your filmography shows quite a variety of roles from concept artist and character designer through to texture painter and character modeller. Do you favour any of these interests over another and do you ever get to fully create any characters from the concept phase through to the finished model?

I don't really favor one in particular, although designing is a lot of fun. I do prefer jumping back and forth between concepts, modeling and texturing or contributing to all. I enjoy the speed of concepting but I also enjoy detailing a model and painting the intricate details for textures. It can be refreshing and it's a nice change to shift your focus on different aspects of building a character. Much like how shifting to a new style or content for every project is also refreshing. I think focusing on these stages independently improves an artist's ability to interpret the character's look throughout different stages of completion. By specializing in one thing at a time, the overall quality of your work and eye





for detail keeps developing. It really shows an artist's ability to translate their vision and carry it through to different mediums. I think that's something I want to keep improving and it's another reason why I would prefer to work on various roles in production. Seeing a design through is a great opportunity for expressing your vision of a character. It's awesome to sometimes have ownership, but I also find it beneficial to work together with other talented artists that can contribute along the way. Especially when you're part of a tight team following the same vision, you can smoothly work together to combine your expertise and achieve stunning results.

I've had the opportunity to create designs on a couple shows, where pre-production was either still in progress, or a design hasn't been finalized. On Journey to the Center of the Earth and Stargate Universe, I was presented with rough ideas and sketches, but had the opportunity to fully create creatures from start to finish. It's a fun and challenging experience and I look forward to the next opportunity!

CG seems to becoming more and more integral to the film industry even if the subject does not overtly fit into the Fantasy or Sci-Fi category. Do you feel that this is changing the nature of film production and the audience's expectations?

I think the progression of technology is making it easier for filmmakers to piece together shots that aren't necessarily practical to film without the use of CG elements. Digital doubles, props, set extensions, explosions, fluid and particle simulations are some examples of seamless CG integration that appears more subtle. As this becomes the norm, audiences may become more accustomed to VFX and expect to see the same sort of visual treatment in all films. It can be quite exciting I think, because it encourages other professionals to utilize technology and create something visually spectacular, whether the effects play a minor or significant role.

Which have been your most challenging projects to date?

That would have to be District 9. The work was pretty complex and challenged me to be more innovative with setting up faster and more efficient ways of getting a substantial amount of textures done. There were numerous texture variations for different alien patterns/ colors, wounds, stickers, and war paint. Clothing modifications were also used to help differentiate. I helped with conceptualizing anything from the ship, to clothing, patterns, colors, eyes, wounds and war paint. Being part of the look development team, we were





challenged with deciding what materials and reference should be used to create an overall believable life-like character. We started to nail one part of the alien at a time, but dealt with ongoing changes like a new face design, new skin materials, and perfecting the look of the shell. It was one year of solid dedication and hard work, but the final results and global recognition has definitely made it all worthwhile.

When producing textures for a film such as District 9 what kinds of resolutions do you work with and does it require a library of photographs taken especially for the project or are you expected to find your own reference material?

Usually in production an assortment of references are gathered for the artists, such as concepts, sculptures, or photos. For the aliens in D9, the concepts and maquettes helped clarify the overall look, but we based our photo-real material/ texture reference on actual insects. It was just a matter of breaking down the references to decide how each texture would work independently to create the results





we needed when they were combined as a whole. I do have my own texture library, but I also search online to find particular images to modify. Besides sculpting the displacement map in ZBrush, everything else was hand painted with a mix of photos. I used a standard map size of 4096 pixels, in 8, 16, or 32bit. The model was unwrapped with 21 UV sets for different sections of the face, arms, legs, and torso. With the mesh split into so many UV sets, anything higher than 4k wasn't necessary.

Your personal portfolio covers a wide array of subject matter from characters displaying a serene beauty to creatures and beasts that appear polar opposites. Tell us a little about this distinct contrast in your work and what inspires such a broad interest?

I was always interested in a variety of subjects, and that was reflected by all the interesting artists I knew, my family, the movies I'd watch and the video games I'd play. I started off as a kid who drew beautiful, cute things, but

when I would see new and amazing work I'd want to mimic that artist's style. I really liked seeing what I could do and constantly pushed myself to the limit. I sketched with friends who drew dinosaurs, monsters, anime, comic and video games characters. This broadened my interests and made me soon realize that even in creatures there was a certain beauty. I've always found complete beauty and monstrous beauty the most challenging and interesting to capture. I find them similar in grace and details despite being such extreme opposites. So I continue to push my work in realms of elegance and intricacy, regardless of portraying a grotesque or serene image.

"AS TIME PROGRESSES AN ARTIST CONNECTS TO THE INDUSTRY THEY FEEL THEIR ART RELATES TO."

There is a higher ratio of men working within the realm of 3d even though there is no shortage of talented women. Why do you think this is the main reason for this?

It's really hard to say, but based on my own experiences I think it could be the absence of specific influences and interests at a young age. Even though I knew other female artists, they all had different experiences and influences. They didn't necessarily watch the same movies,



play video games, read or draw comics, or have any exposure to the same content. As time progresses an artist connects to the industry they feel their art relates to. In terms of the jobs I've tried, I feel the best fit is in entertainment and that's probably because it played a huge part in my life.

Do you apply much post production in your stills and typically what passes do you render out?

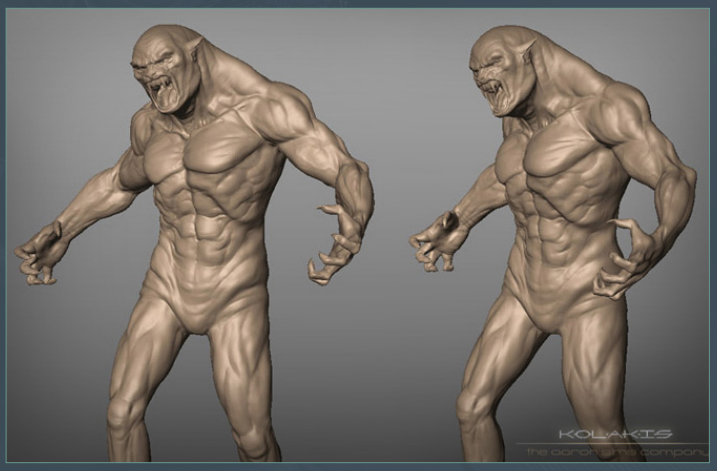
Depending how high resolution the render is, I may separate renders based on materials or objects. Especially materials like metal, skin, or hair so I can duplicate layers to overlay, blur, sharpen, contrast, etc. The areas that are masked out can sometimes be heavily altered with filters, layer adjustments, and color correction. It gets more complex when I want to fix/create shadows, hair, materials, or specular highlights. Usually when I have the time I'll create more accurate 3d renders that don't need much post work. For professional quick concepts, I will use a basic render, sketch, or photo, and either paint or add cg elements- like







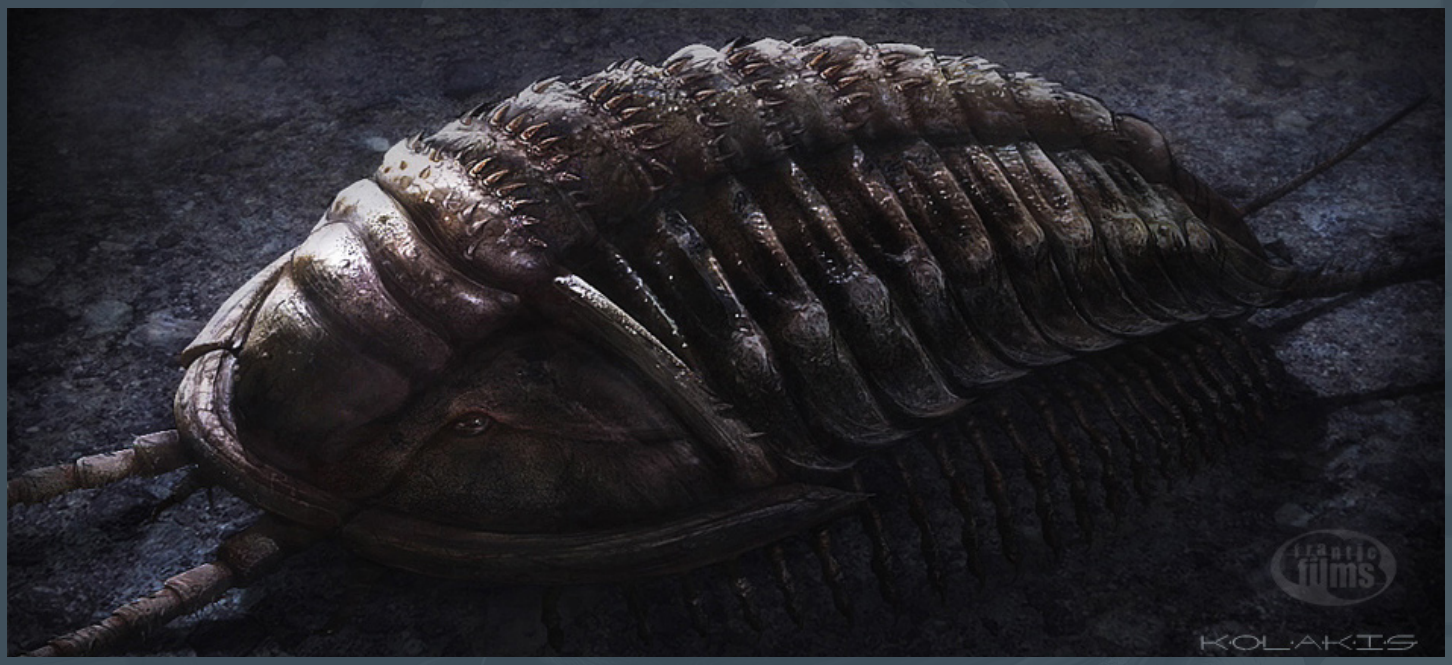
the hands, face or clothes and integrate that into the image. In this case post production would be more complex, but done faster to get the overall mood or feeling of a character or scene.



"If you're passionate about art, learn as much as you can and surround yourself with like minded individuals."

What advice would you give to any newcomers who wish to pursue a similar career path to yourself?

If you're passionate about art, learn as much as you can and surround yourself with like minded individuals, and those who are doing what



you want to do. Network online and at events so you can keep in touch with industry professionals. I encourage all artists to build up their knowledge in 2d, 3d, and even traditional sculpting. I find they complement each other and teach new skills that may help you become a more "well rounded" artist. Work on a lot of personal studies like mimicking real life or photo references to further develop your eye for detail. Always put your best work forward. Create an online presence by sharing your work on numerous sites and listen to constructive critiques that help you realize your strengths and weaknesses. Work the long hours, perfect your craft, and prepare yourself... an amazing portfolio never goes unnoticed.

Many thanks for taking the time to speak to 3D Creative!

Thanks to you too, I'm so glad to have the opportunity to contribute :) You guys are awesome for putting together this community, so keep up the amazing work!!



JULIANNA KOLAKIS

For more work by this artist please visit
http://www.kolakis-studio.com/
or contact them at
jkolakis@hotmail.com

Interviewed By : Richard Tilbury

New DVD Release



Unreal Development Kit - An Introduction and Application

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the gallery



This Month we Feature:

Valentin Yovchev

Jack Zhang

Oliver Khalil

Petr Nasirov

Simeon Patarozliev

Candy Lab

Rana Azeem Khan

Christian Hein

Sajid Mumtaz Raza

Sven Juhlin



The Sleeping Beauties

Simeon Patarozliev
http://spatarozliev.co.uk
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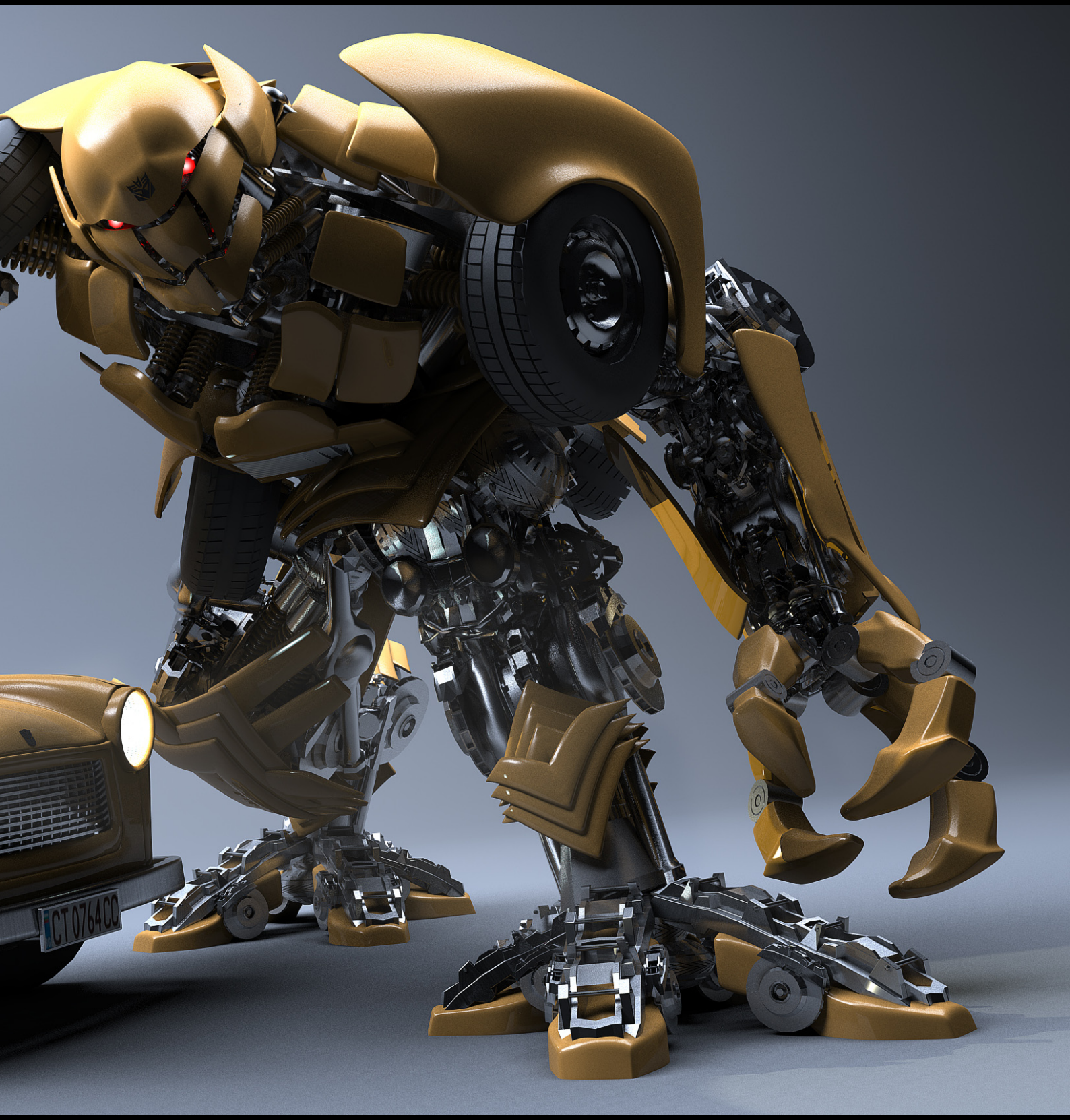
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Robot in Disguise

Valentin Yovchev
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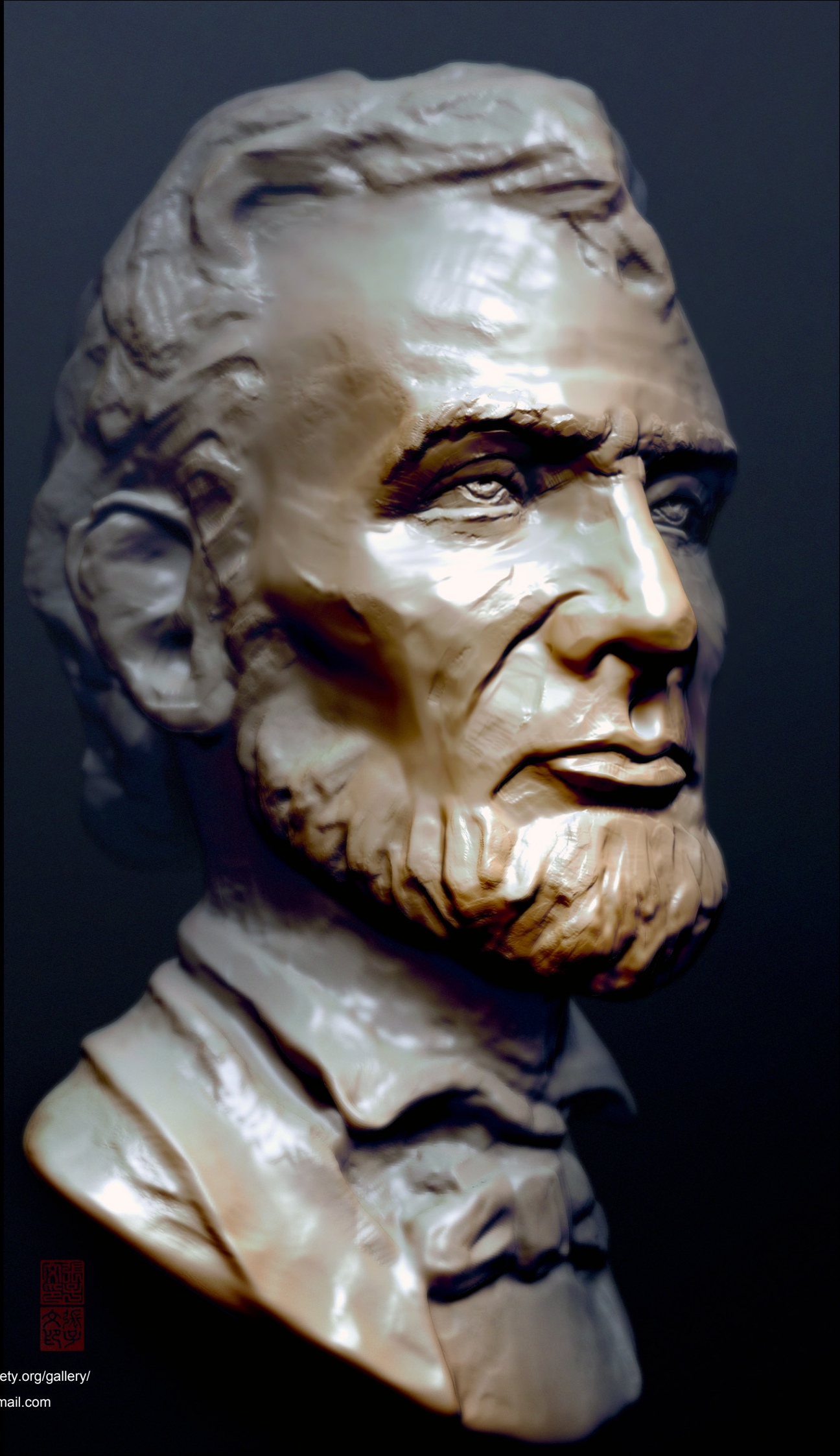



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Terrace Image

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Don The King

Rana Azeem Khan

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azeem.rana@hotmail.com

Judge Death - beauty shot

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http://www.5k3d.com
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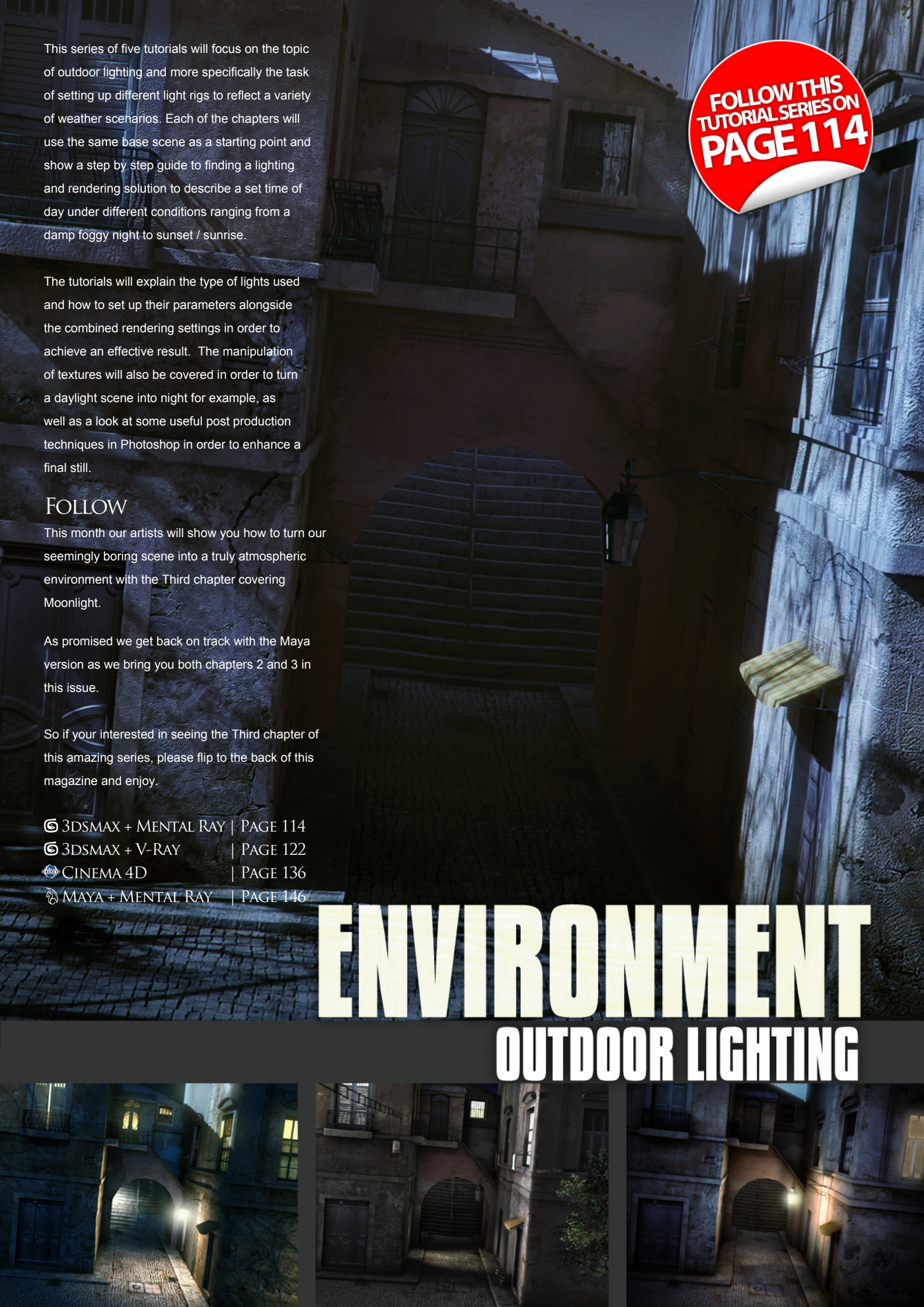



DEATH
© Petr Nasirov

Goblin

Sven Juhlin
http://www.daybreakcg.com/
svenjuhlin@hotmail.com





This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

Follow

This month our artists will show you how to turn our seemingly boring scene into a truly atmospheric environment with the Third chapter covering Moonlight.

As promised we get back on track with the Maya version as we bring you both chapters 2 and 3 in this issue.

So if your interested in seeing the Third chapter of this amazing series, please flip to the back of this magazine and enjoy.

3DSMAX + MENTAL RAY | PAGE 114
3DSMAX + V-RAY | PAGE 122
CINEMA 4D | PAGE 136
MAYA + MENTAL RAY | PAGE 146

FOLLOW THIS TUTORIAL SERIES ON PAGE 114

ENVIRONMENT

OUTDOOR LIGHTING

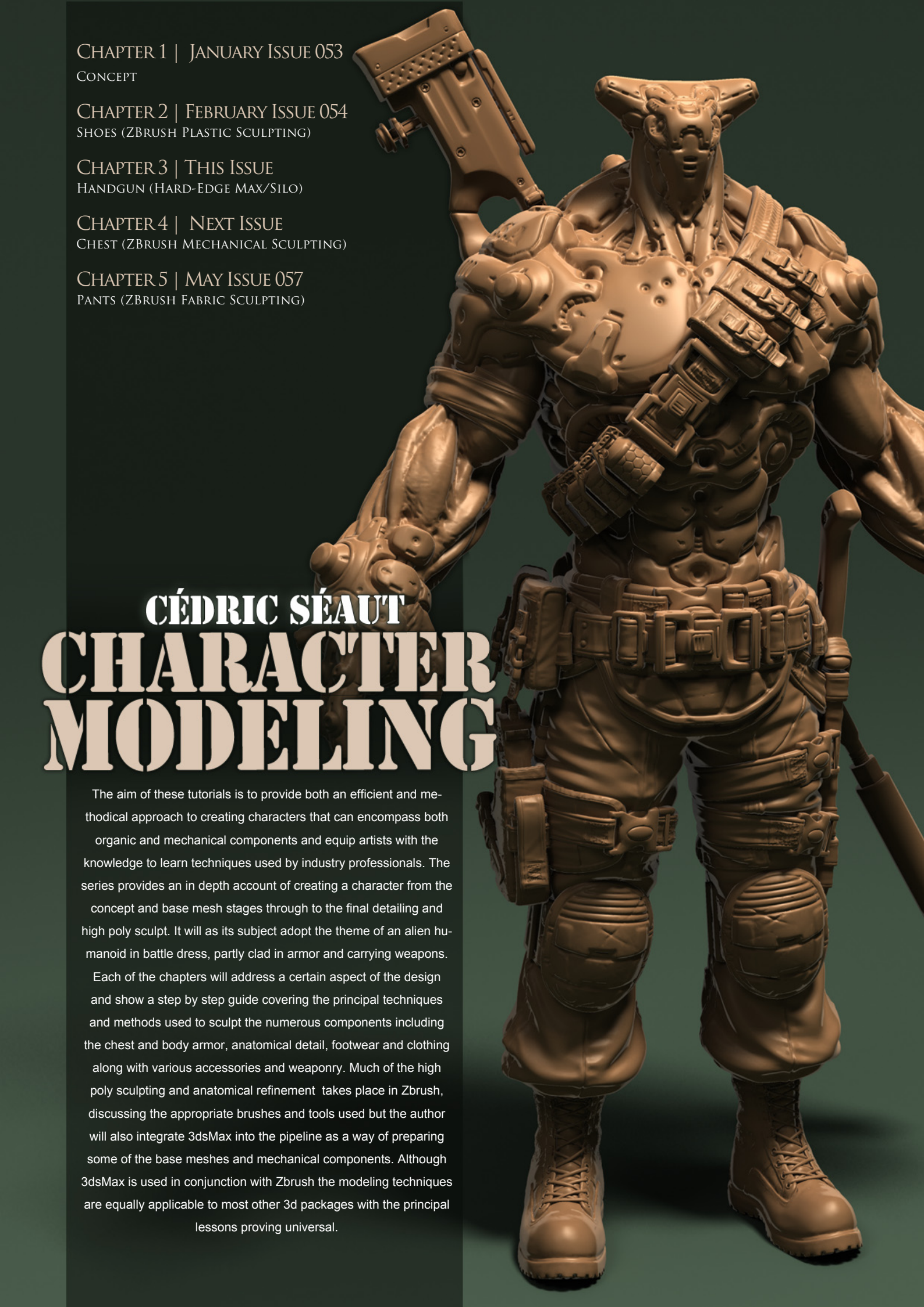
Chapter 1 | January Issue 053
Concept

Chapter 2 | February Issue 054
Shoes (ZBrush Plastic Sculpting)

Chapter 3 | This Issue
Handgun (Hard-Edge Max/Silo)

Chapter 4 | Next Issue
Chest (ZBrush Mechanical Sculpting)

Chapter 5 | May Issue 057
Pants (ZBrush Fabric Sculpting)



CÉDRIC SÉAUT
CHARACTER MODELING

The aim of these tutorials is to provide both an efficient and methodical approach to creating characters that can encompass both organic and mechanical components and equip artists with the knowledge to learn techniques used by industry professionals. The series provides an in depth account of creating a character from the concept and base mesh stages through to the final detailing and high poly sculpt. It will as its subject adopt the theme of an alien humanoid in battle dress, partly clad in armor and carrying weapons. Each of the chapters will address a certain aspect of the design and show a step by step guide covering the principal techniques and methods used to sculpt the numerous components including the chest and body armor, anatomical detail, footwear and clothing along with various accessories and weaponry. Much of the high poly sculpting and anatomical refinement takes place in Zbrush, discussing the appropriate brushes and tools used but the author will also integrate 3dsMax into the pipeline as a way of preparing some of the base meshes and mechanical components. Although 3dsMax is used in conjunction with Zbrush the modeling techniques are equally applicable to most other 3d packages with the principal lessons proving universal.

CHAPTER 3 - GUN (HARD-EDGE MODELING)

Software Used: ZBrush, 3ds Max, Silo, and Photoshop

INTRODUCTION

In the following chapter, we are going to see the step by step progress used to create a Handgun. The technique used is not complicated, we just need to know how to use a couple of functions in 3dsmax and have some patience and good references.

Fig 01

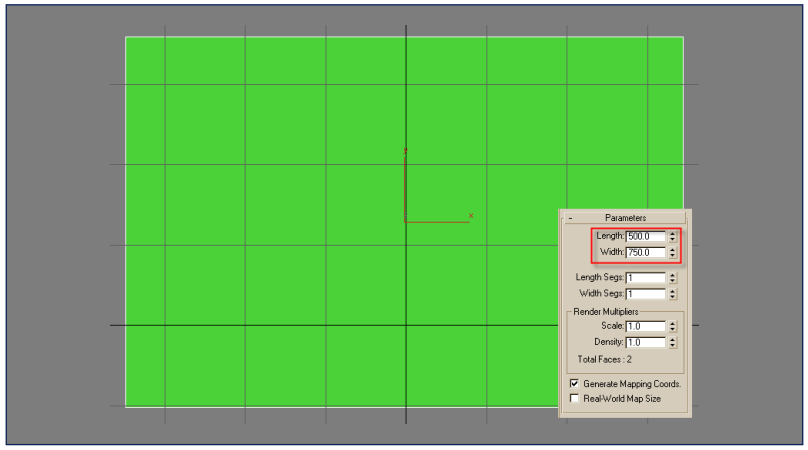


Fig 02



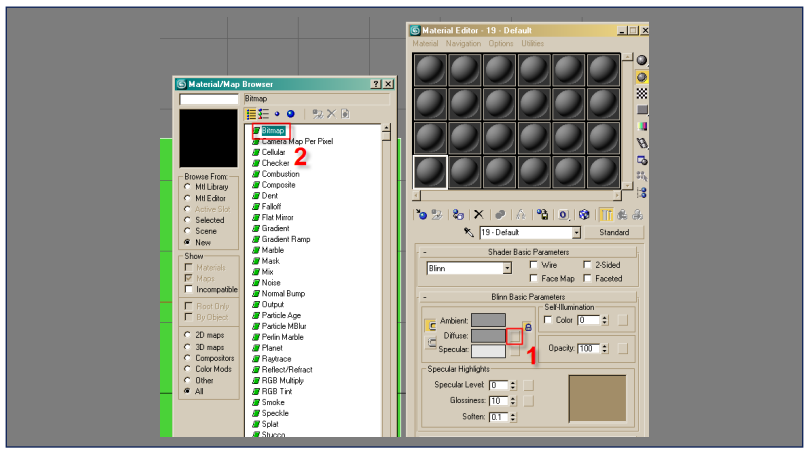
1-2. The first step is to gather reference material. Google is probably the best friend you could have on the internet. For this character I chose a Desert Eagle. Try to find references from different angles and especially the side view which will be very important in creating the main shape. (**Fig.01 – 02**)

Fig 03



3. In the front viewport, create a plane with the same length and width as your reference picture. (**Fig.03**)

Fig 04



4. Open the Material Editor by pressing M hotkey and select a slot in the new window. Then click on the square button beside Diffuse and a new pop-up appears. Select Bitmap and choose your reference picture. (**Fig.04**)

5. Once your reference picture is loaded, apply the material to your object (1) and display the picture in the viewport (2). (**Fig.05**)

Fig 05



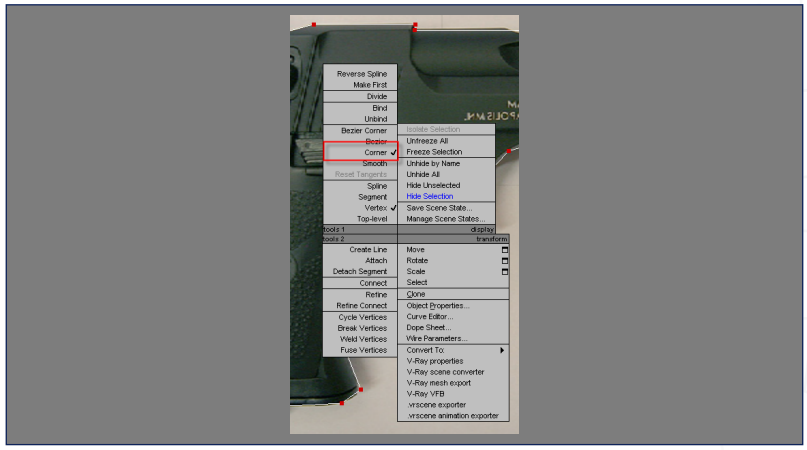
6. Create a line around the gun as you did in chapter 2 (see 146). (**Fig.06**)

Fig 06



7. Select all the vertices, right click to display the pop-up menu and select Corner. It's really important because we are going next to work with an Editable Poly so do not need any Bezier information. (**Fig.07**)

Fig 07



8. Convert to an Editable Poly and you have a big polygon with n-gons. (**Fig.08**)

Fig 08



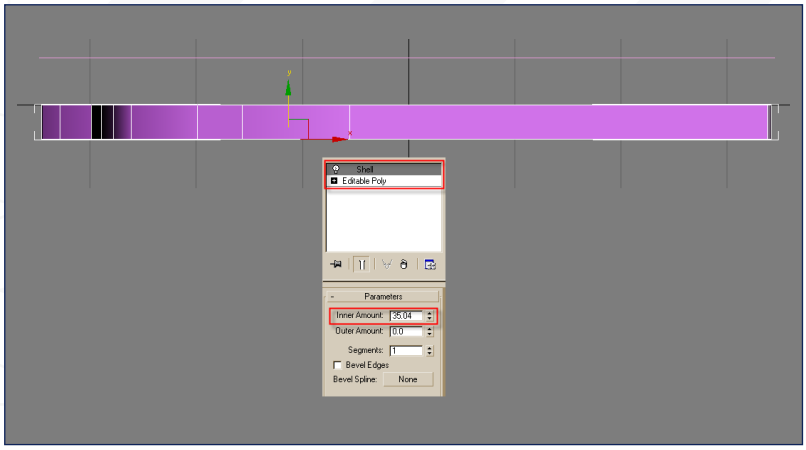


Fig 09

9. Add a Shell modifier to create some thickness. (**Fig.09**)

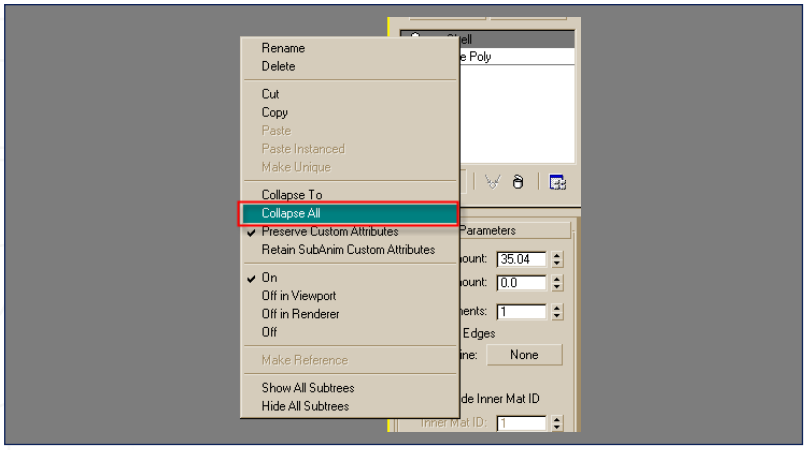


Fig 10

10. Collapse the stack by right clicking on Shell - Collapse All. (**Fig.10**)

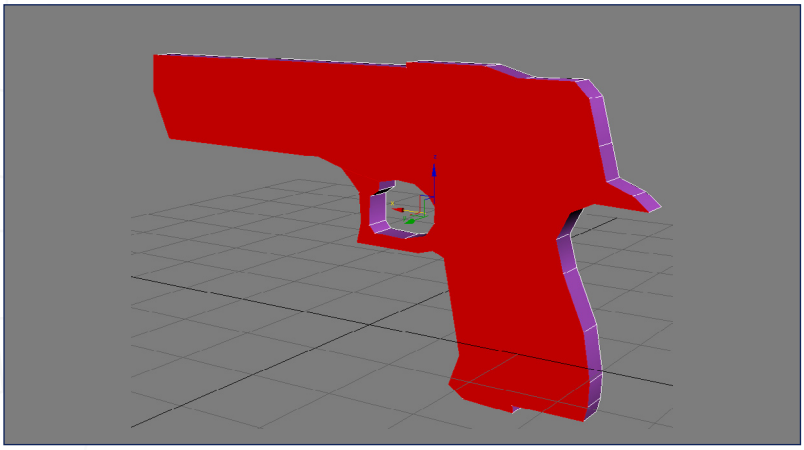


Fig 11

11. Don't forget do remove the face at the back where the Symmetry axis will be situated. (**Fig.11**)

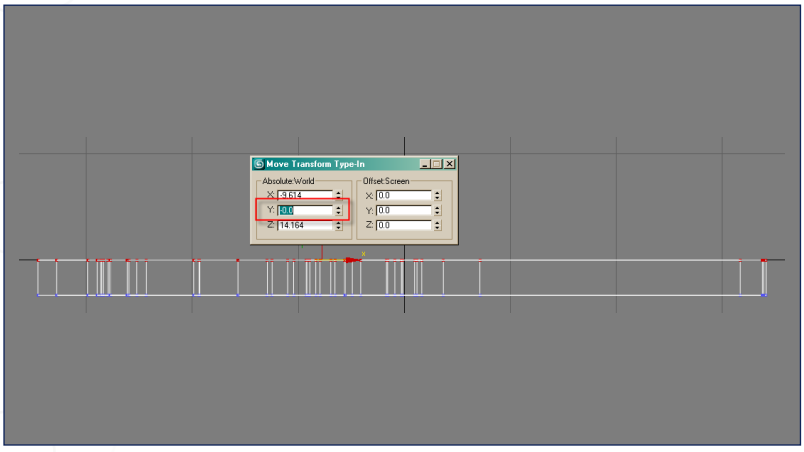


Fig 12

12. As we often did with the previous chapters, select all the vertices at the back from within the top view. Right click on the Move button and change the Y value to align them correctly along the symmetrical axis. (**Fig.12**)

13. Here is the result so far in the side view. (**Fig.13**)

Fig 13



14-15. Select the object and then press Alt+X and it will become transparent, allowing you to use the reference picture as a guide. With the Cut function, add some sections as shown below. Just press Alt+X again if you want to view your object as in the previous preview. (**Fig.14 – 15**)

Fig 14

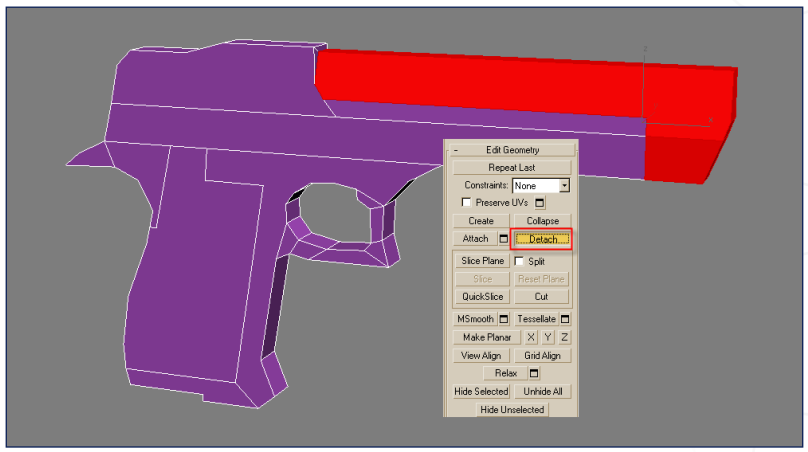


Fig 15



16. We are going now to detach the different elements that we are going to work on separately. Let's detail the procedure for just one section as it will be the same for all. Detach the chosen section as shown below. (**Fig.16**)

Fig 16



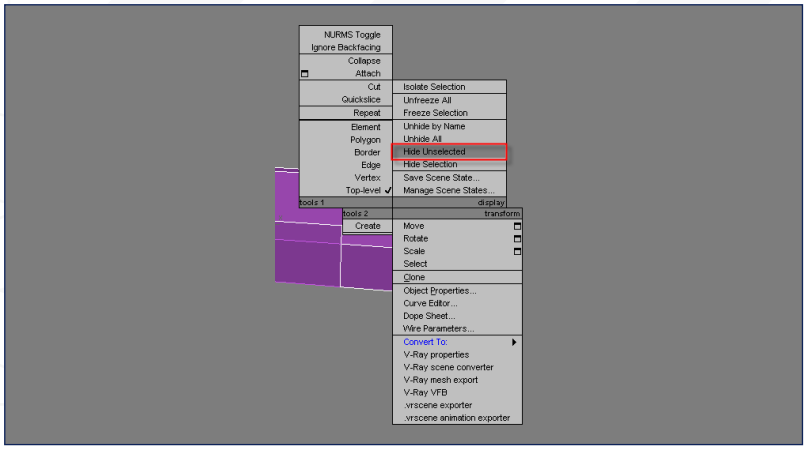


Fig 17

17. You now have a new object in the scene. (**Fig.17**)

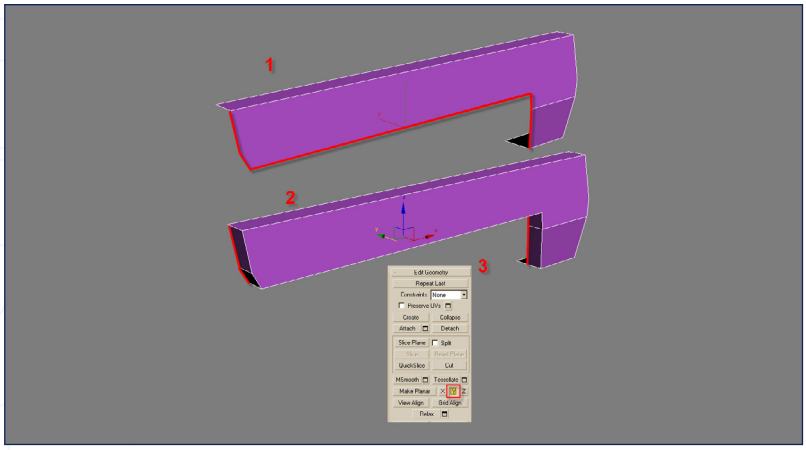


Fig 18

18. Select the open area along the bottom and whilst pressing Shift, move them to the left in order to extrude them. Then press Y to align the new edges together. (**Fig.18**)

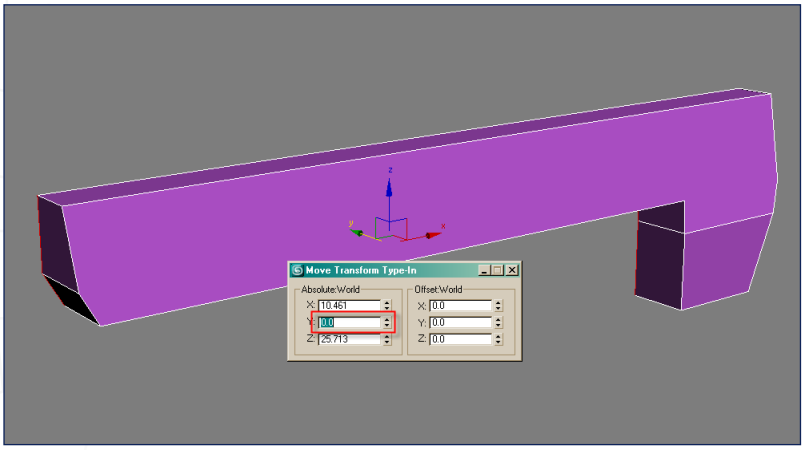


Fig 19

19. As we have often done during the last two chapters, right click on the Move transformation button to show the numerical parameters and change the Y value to 0 to align the edges along the symmetrical axis. (**Fig.19**)

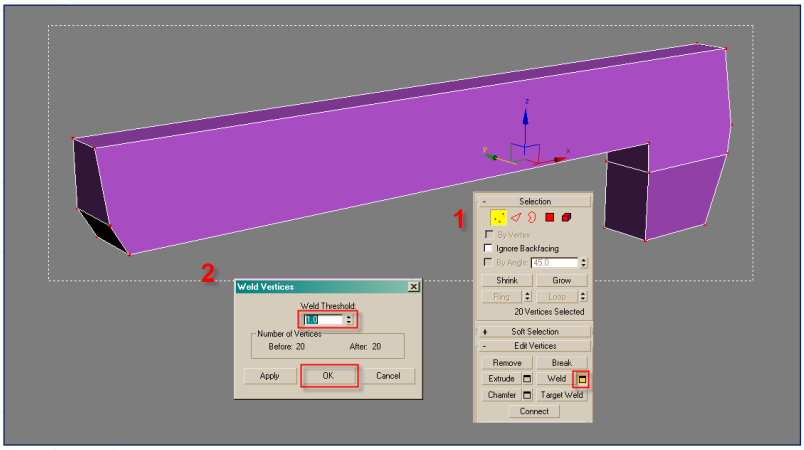


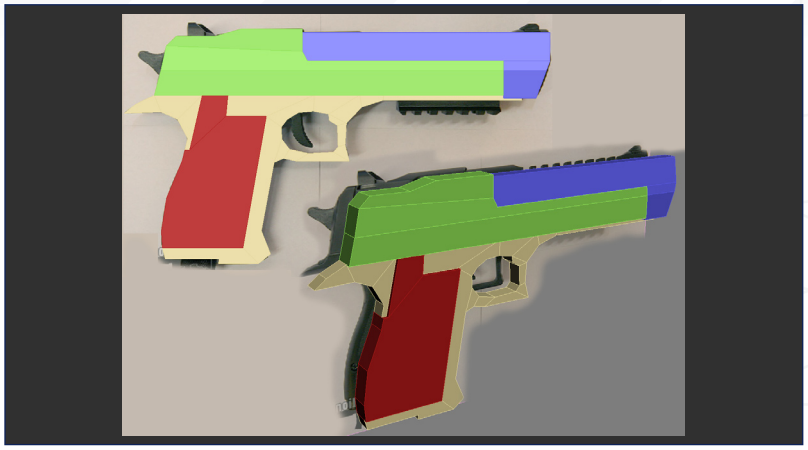
Fig 20

20. Now select all the vertices and press the square box beside Weld, changing the value in the new window to 1. This will weld all the vertices that occupy the same position. (**Fig.20**)

21. Do this for all the pieces you previously cut earlier; 5 altogether. (**Fig.21**)

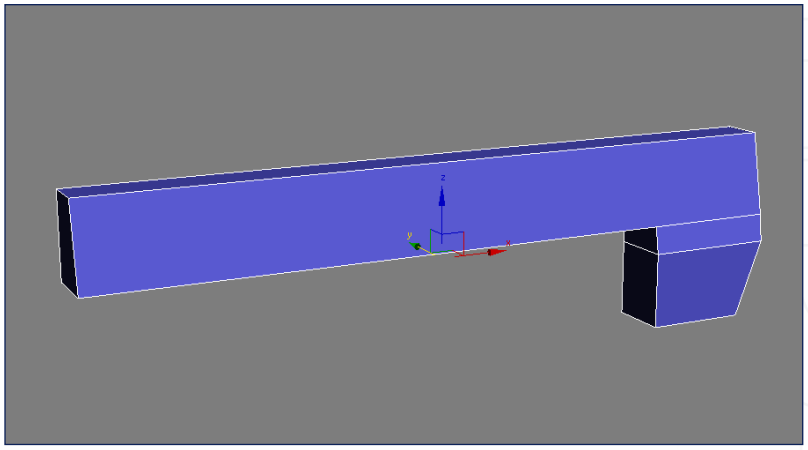
We will then work on them one by one in order to create a more accurate model.

Fig 21



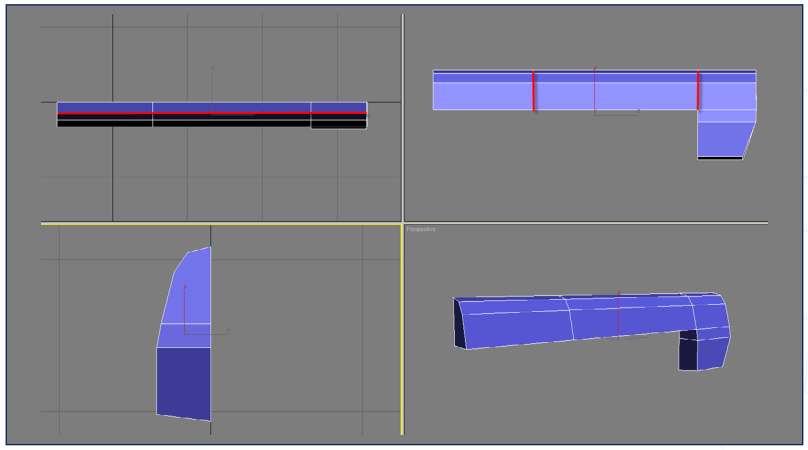
22. We will begin with the barrel. (**Fig.22**)

Fig 22



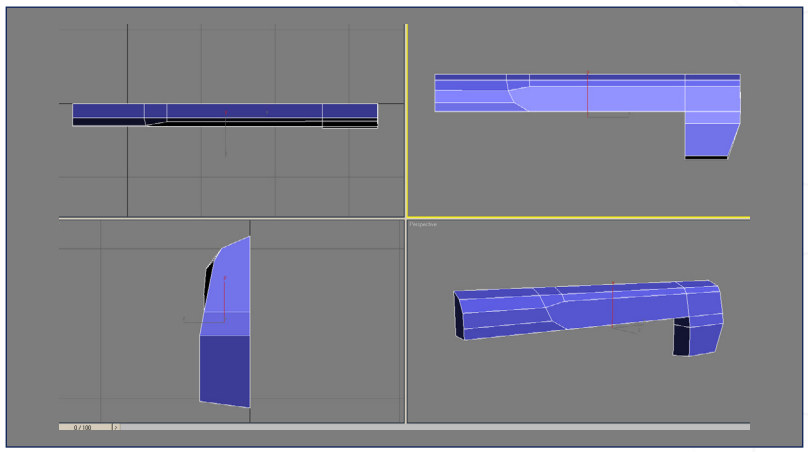
23. In the following, you will see that there are not too many things to explain. The few functions used during the modeling process are mainly Cut, Extrude, Chamfer, Bevel, Connect... and patience. The most important thing is to always use the reference picture in the background to help you understand the details and volumes. (**Fig.23**)

Fig 23



24. Here is the step by step process, adding some cuts to create the new lines. (**Fig.24**)

Fig 24



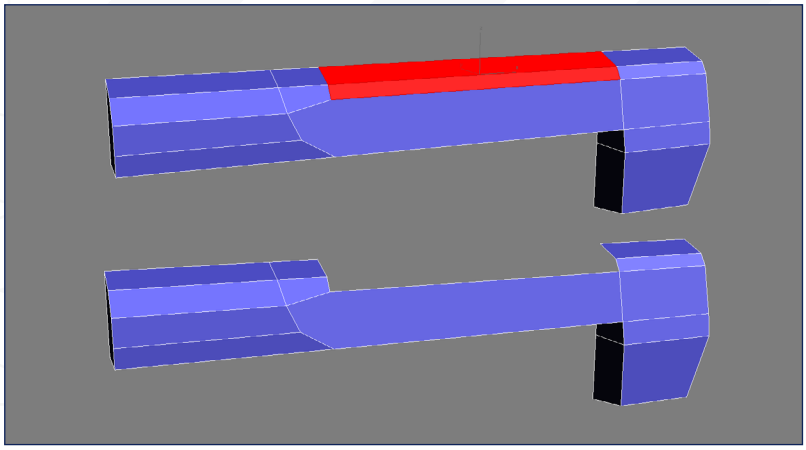


Fig 25

25. Delete the top piece as shown below to be able to extrude important elements later. (**Fig.25**)

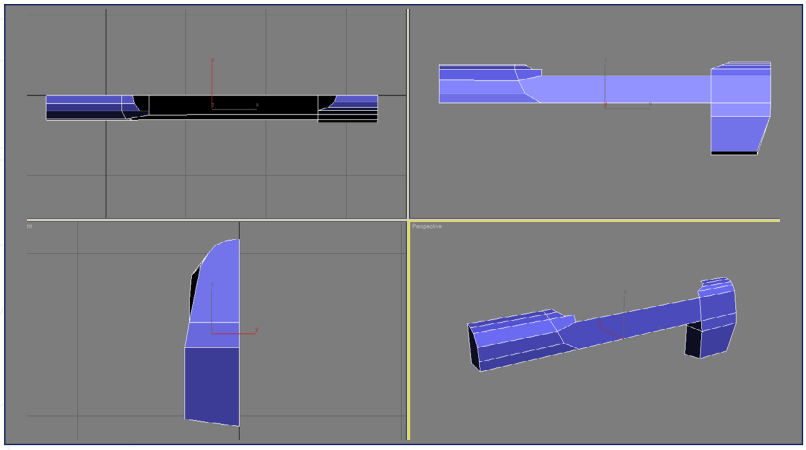


Fig 26

26. Here is a different angle to show the barrel. (**Fig.26**)

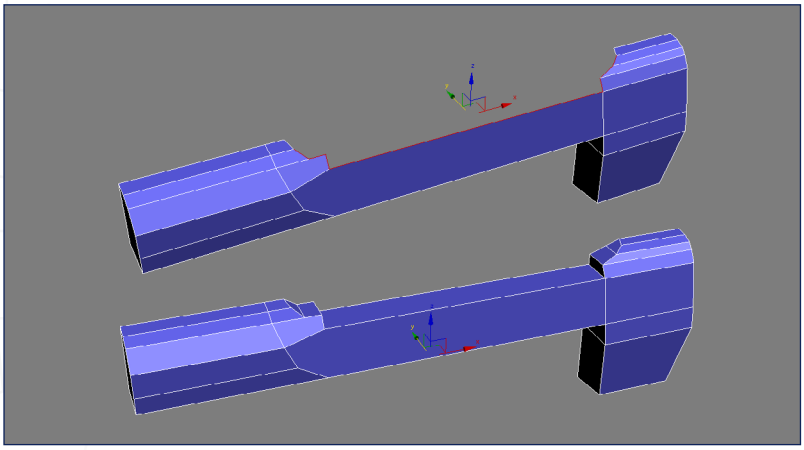


Fig 27

27. Do the same as above (see 18) to close the top of the object. (**Fig.27**)

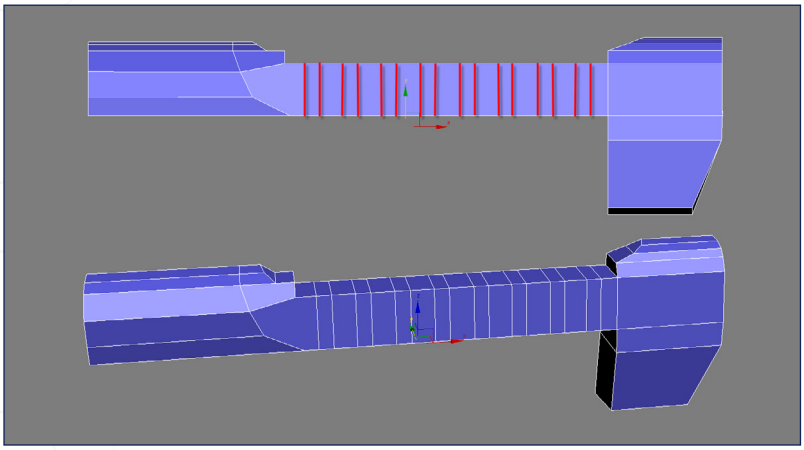
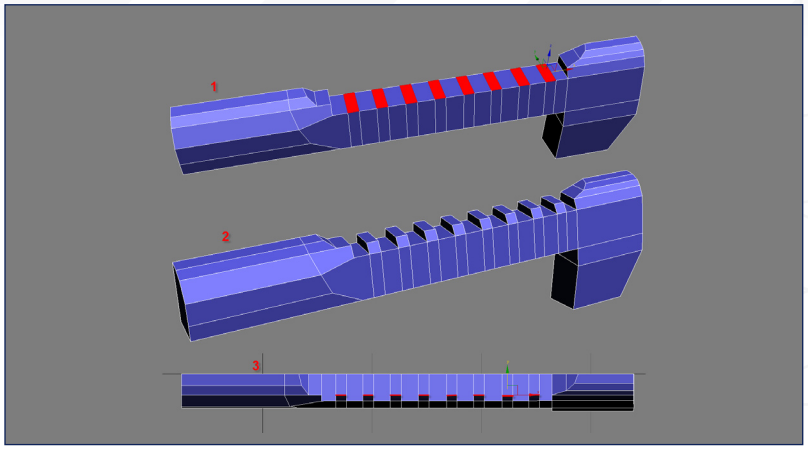


Fig 28

28. Add some cuts in order to extrude some grips. (**Fig.28**)

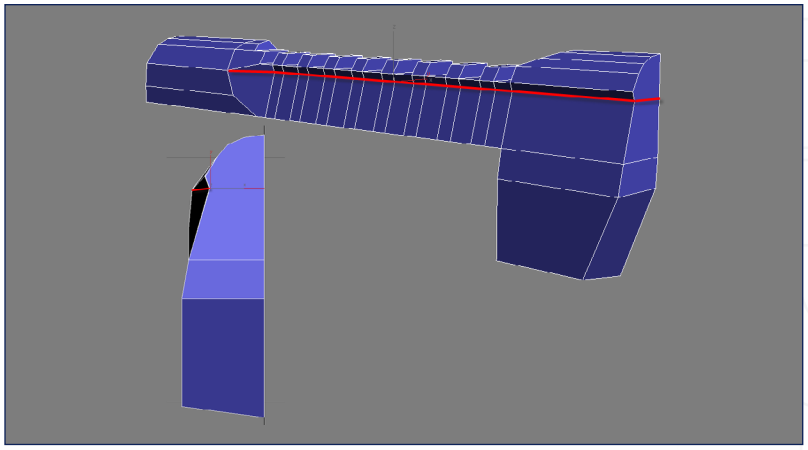
29. Select faces on the top and extrude them as shown below but don't forget to slide them to the inside a little to match with the reference. (**Fig.29**)

Fig 29



30. Add a long horizontal cut. (**Fig.30**)

Fig 30



31-32-33. Add some cuts in order to create a hole. This hole will be important for connecting the different pieces. Don't forget to align the lines with the symmetrcal axis otherwise you will have to fix this later. (**Fig.31 – 33**)

Fig 31

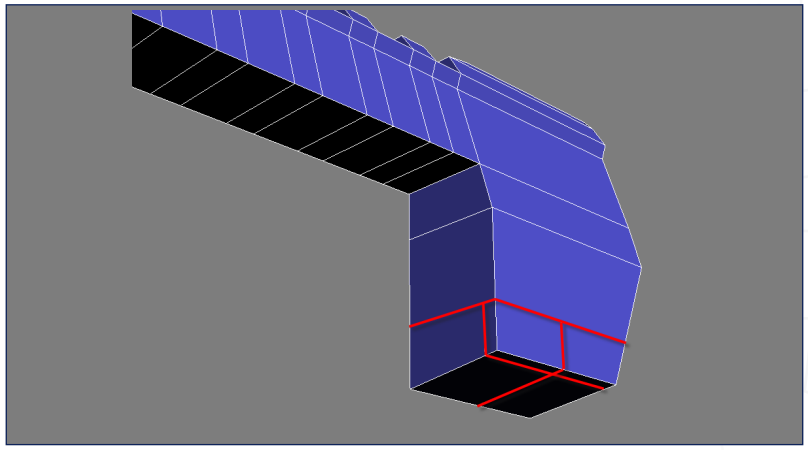
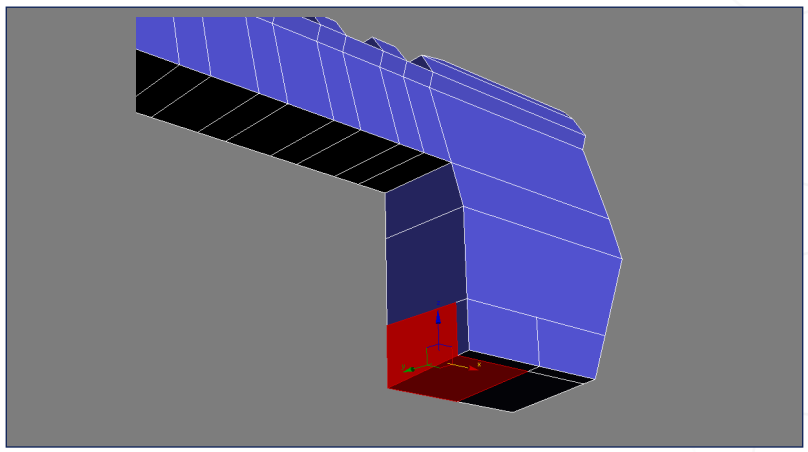


Fig 32



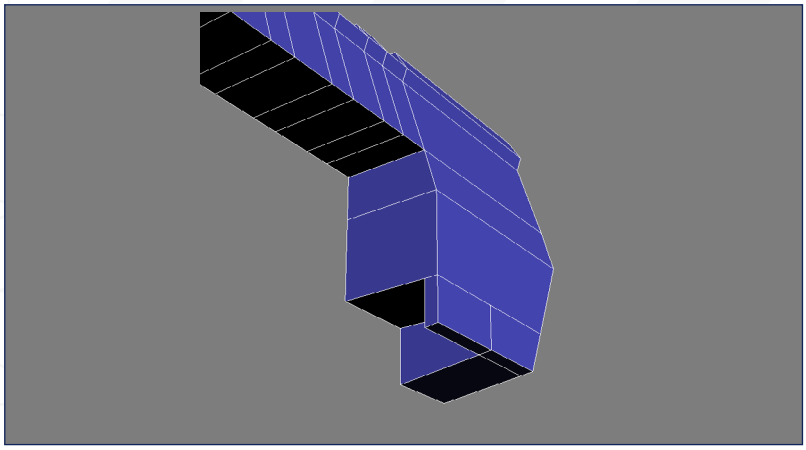


Fig 33

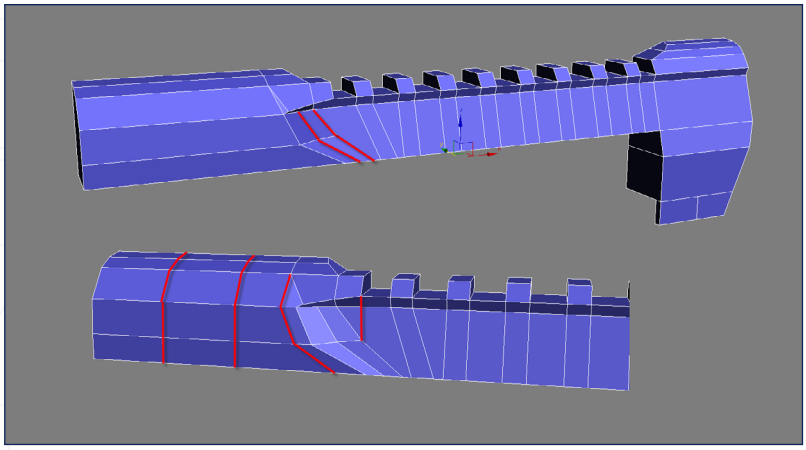


Fig 34

34. More cuts to keep in track with the reference. It's good to add more polygons sometimes to avoid rectangles. If you want to sculpt some areas then it's good to keep as many squares as possible. (**Fig.34**)

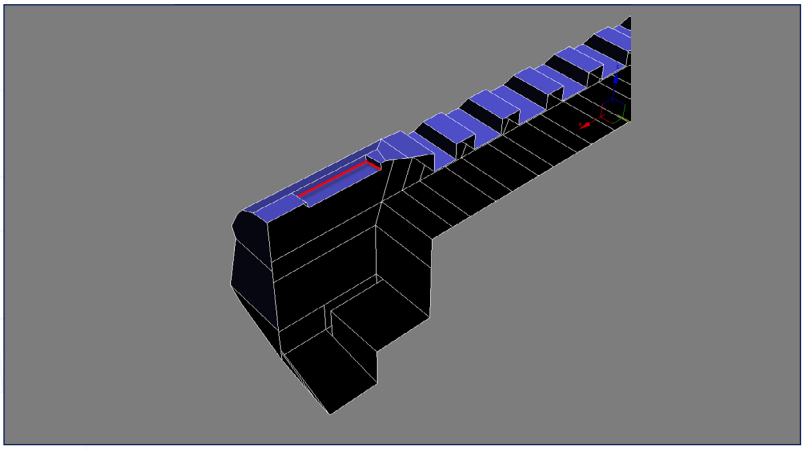


Fig 35

35. Extrude a rectangle at the extremity to prepare the target. (**Fig.35**)

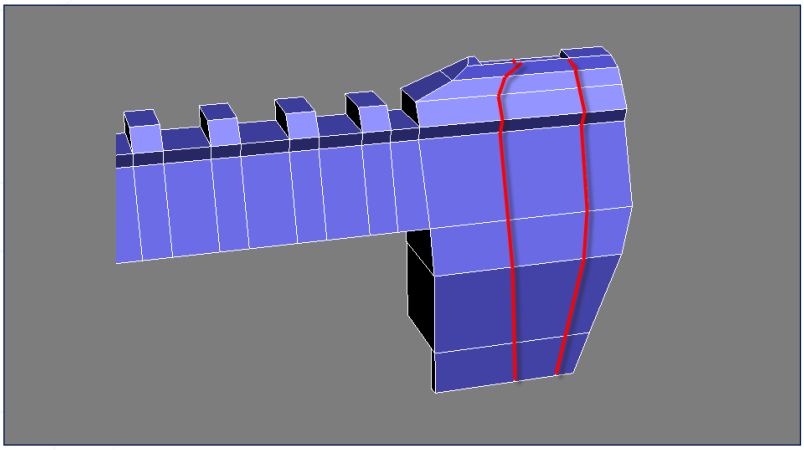
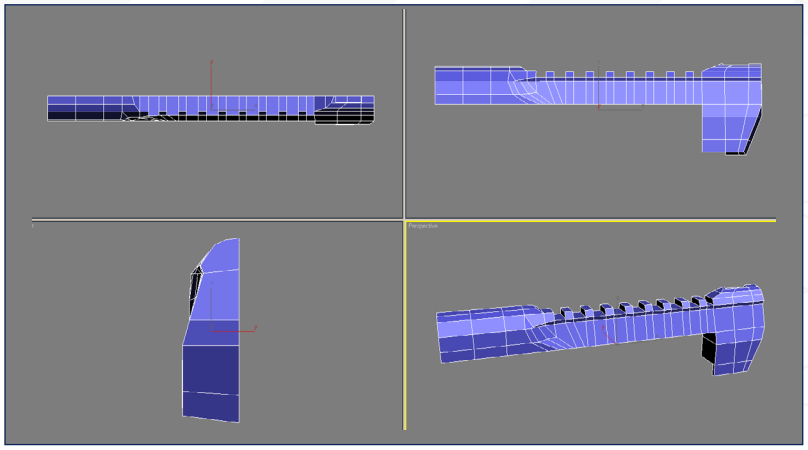


Fig 36

36. Add more cuts in order to follow the above advice (see 34). (**Fig.36**)

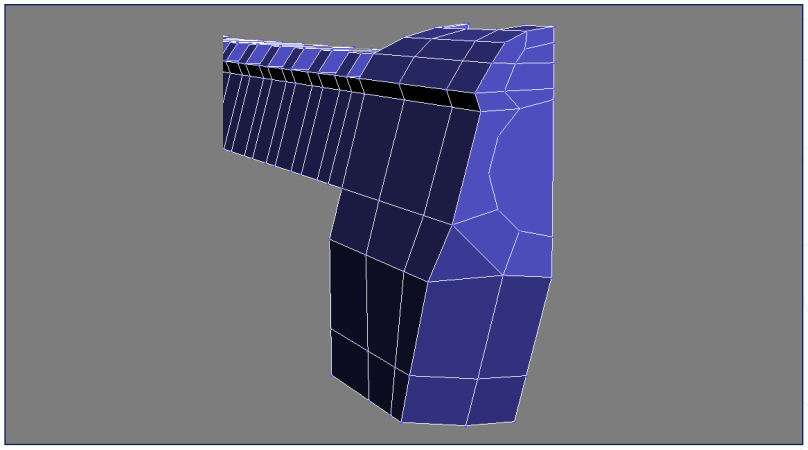
37. Here is the result from several angles. (**Fig.37**)

Fig 37



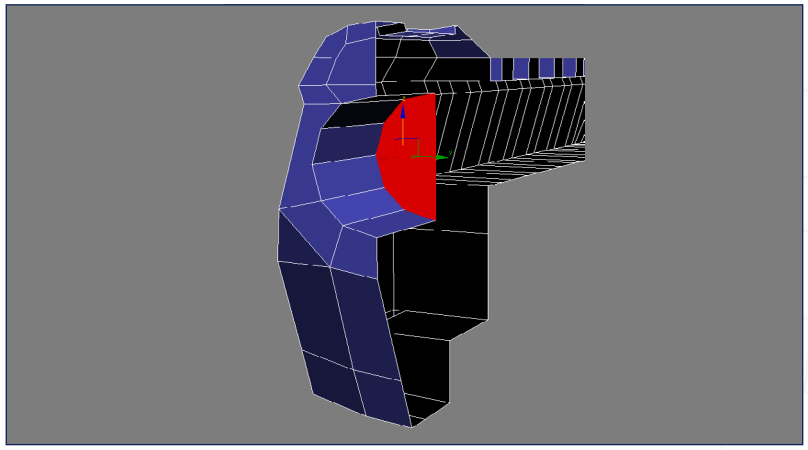
38. Add some cuts on the front to prepare the hole. (**Fig.38**)

Fig 38



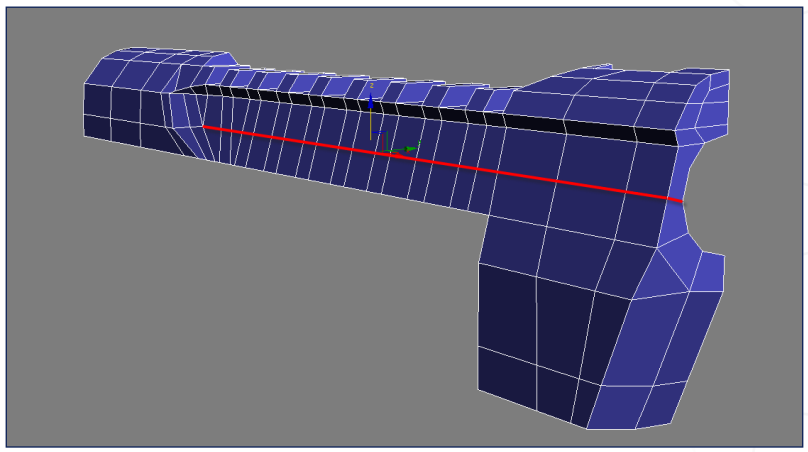
39. Now extrude it. (**Fig.39**)

Fig 39



40-41. More cuts to reduce the rectangles. (**Fig.40 – 41**)

Fig 40



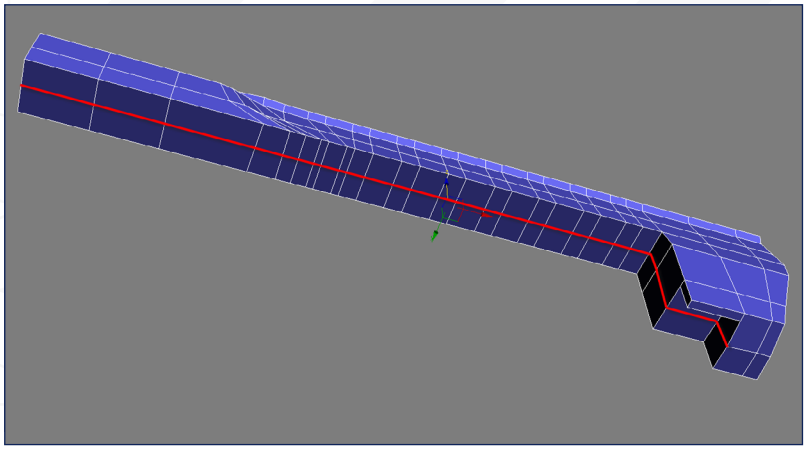


Fig 41

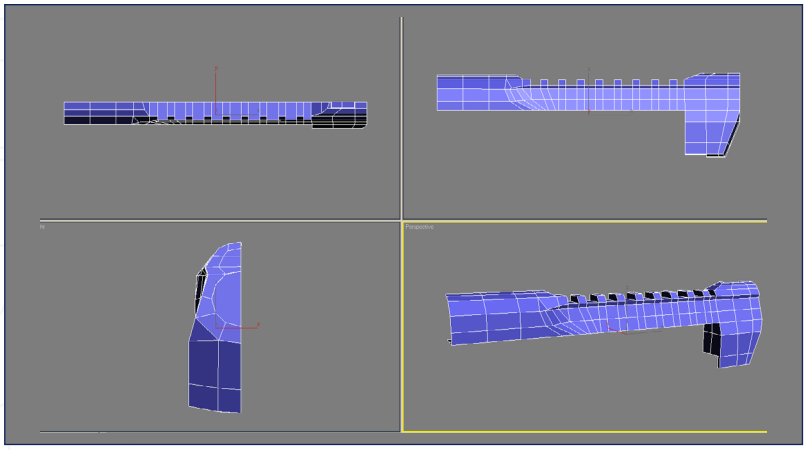


Fig 42

42. Current preview. (**Fig.42**)

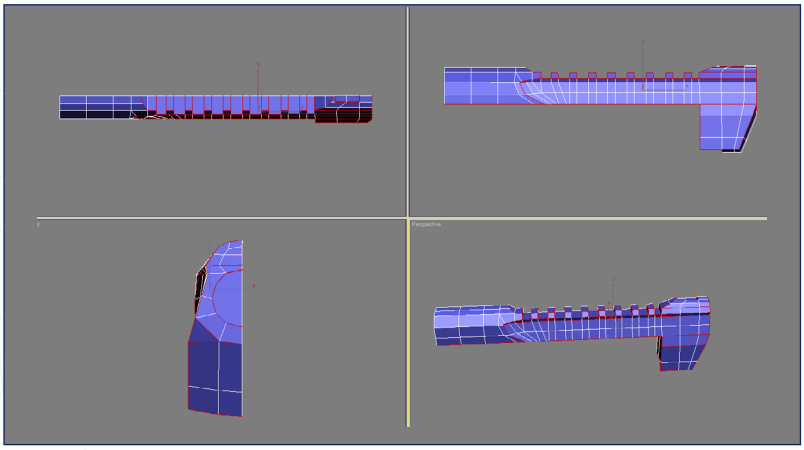


Fig 43

43. We are now going to chamfer edges to increase the quality once the object is smoothed. Chamfer is a very powerful function when modeling mechanical objects. (**Fig.43**)

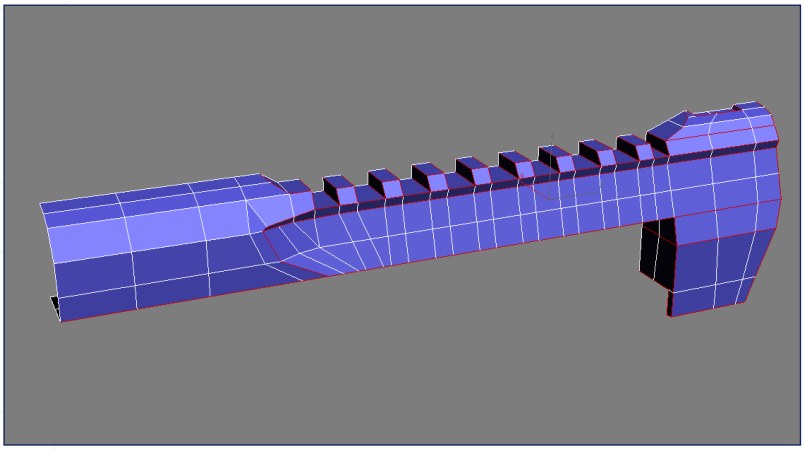
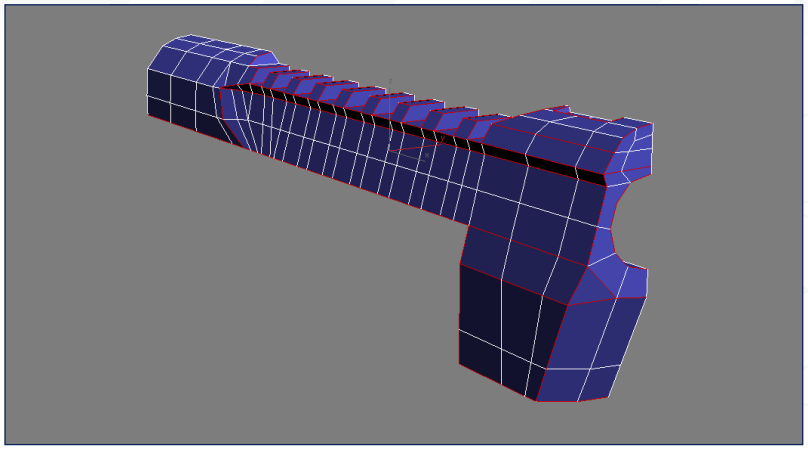


Fig 44

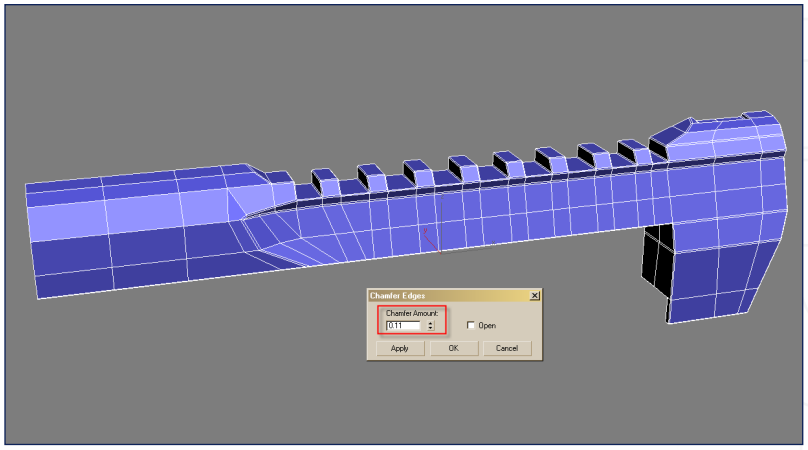
44-45. Some more angles to better see the edges we are going to chamfer. (**Fig.44 – 45**)

Fig 45



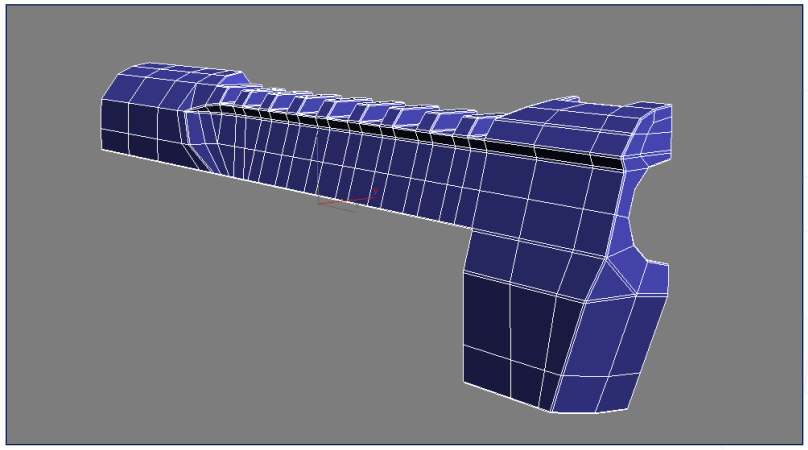
46. Chamfer them as much as you want. (**Fig.46**)

Fig 46



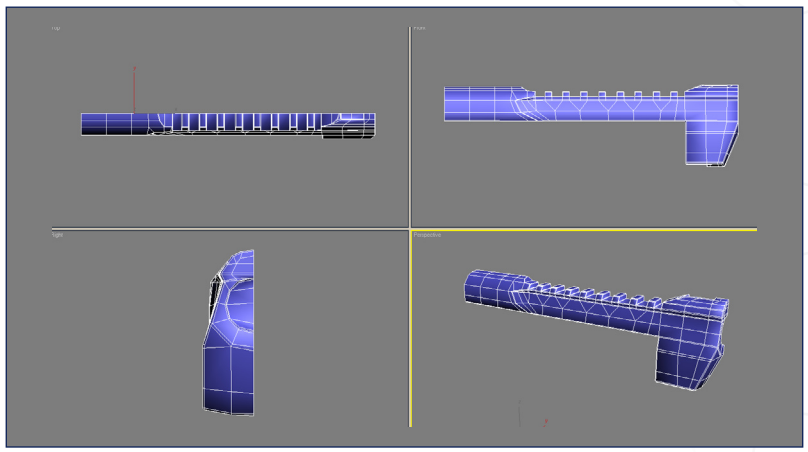
47. The result - don't hesitate to add some final touches to keep the mesh as quads. (**Fig.47**)

Fig 47



48. Some more angles. (**Fig.48**)

Fig 48



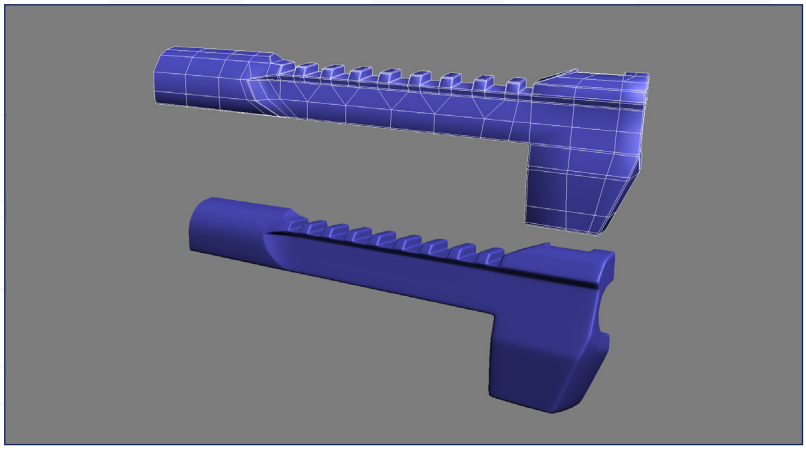


Fig 49

49. To smooth the model, just add a Meshsmooth modifier. (**Fig.49**)

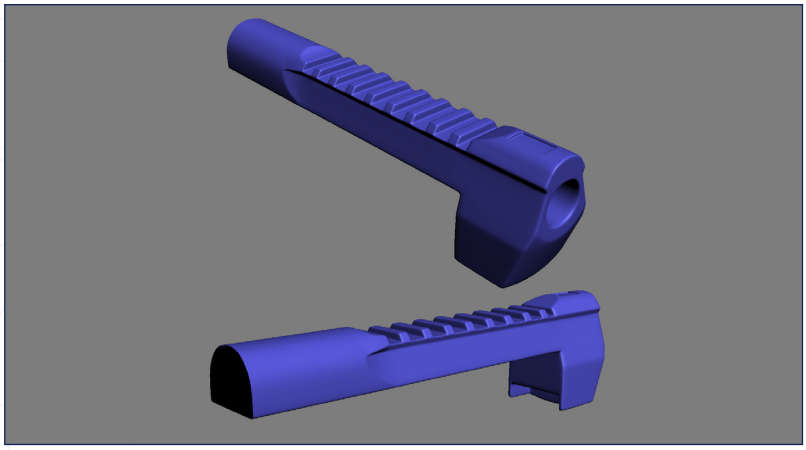


Fig 50

50. Now apply a Symmetry modifier and enjoy the result for a few moments. (**Fig.50**)

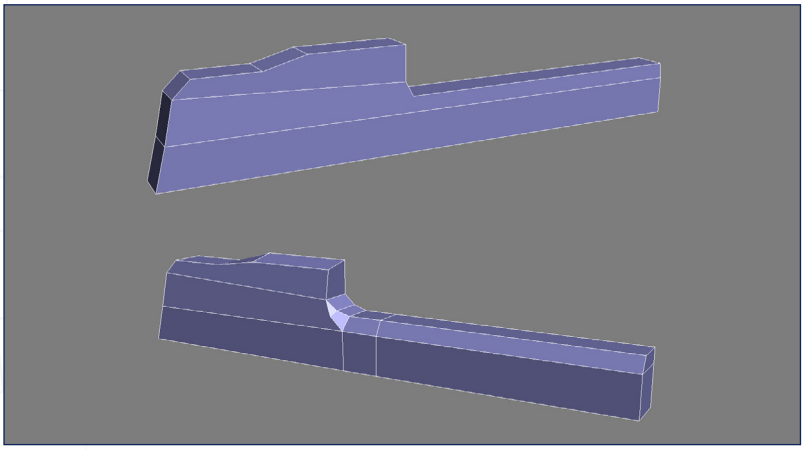


Fig 51

51. The second piece. (**Fig.51**)

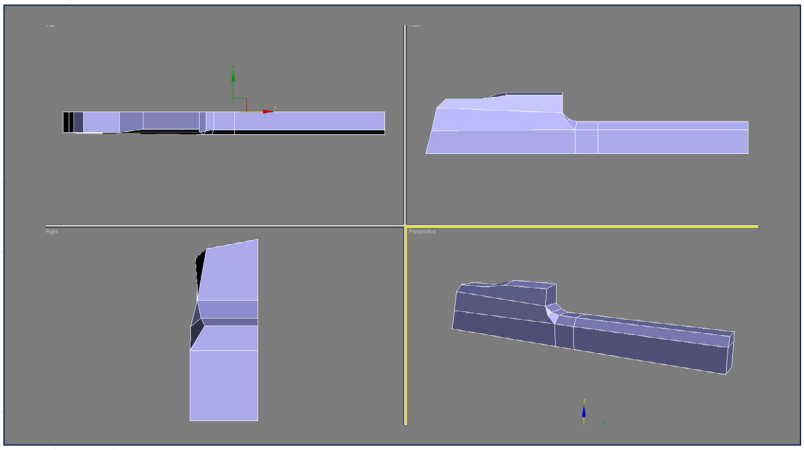
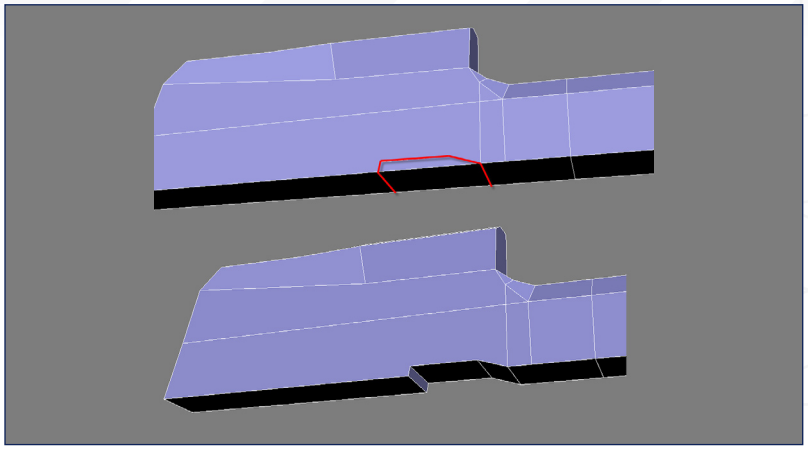


Fig 52

52. Some different angles to help you visualize volumes. (**Fig.52**)

53. Cut a hole at the bottom to help insert an object later. (**Fig.53**)

Fig 53



54-55. Do the same on the front. (**Fig.54 – 55**)

Fig 54

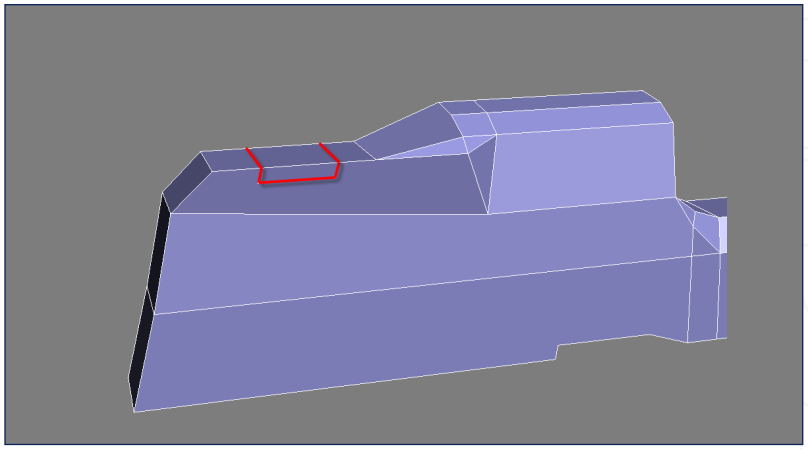
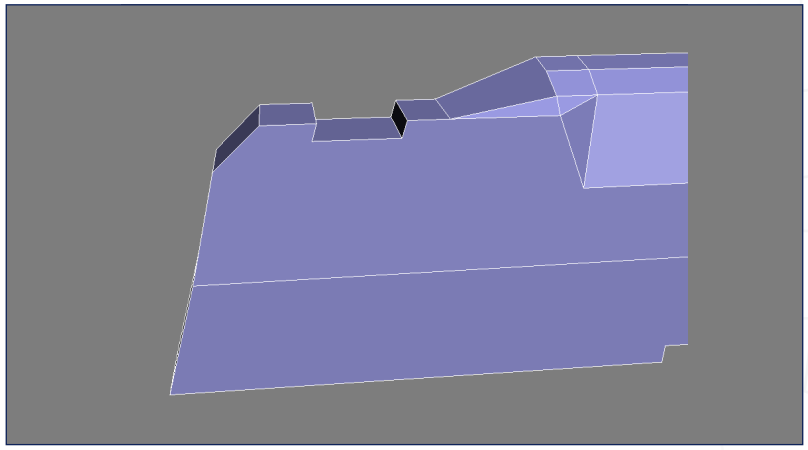
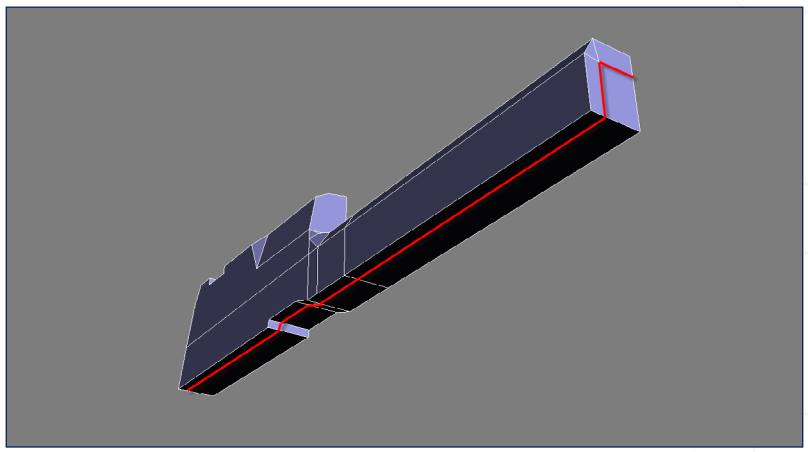


Fig 55



56-57. Cut some lines in order to remove the faces. (**Fig.56 – 57**)

Fig 56



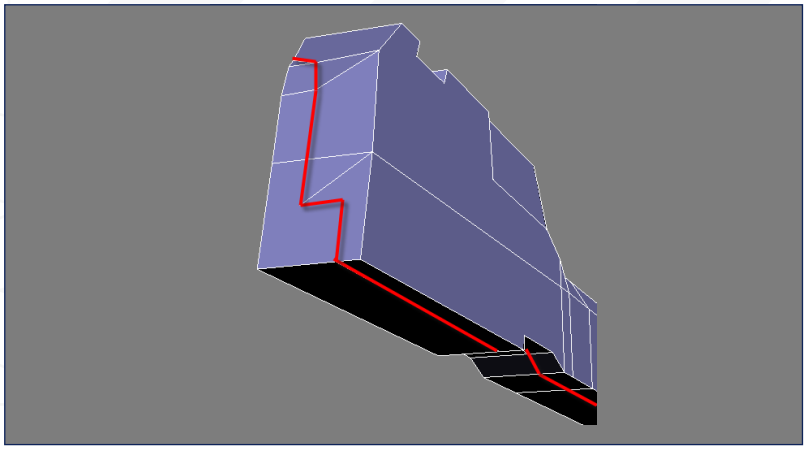


Fig 57

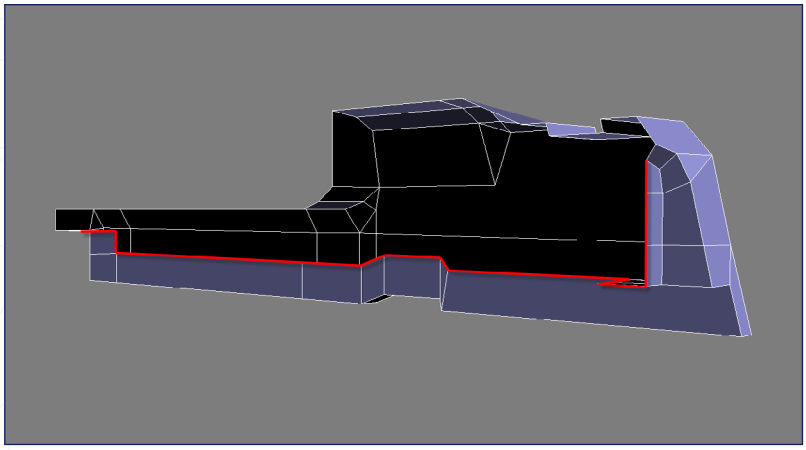


Fig 58

58-59-60. Remove the faces and extrude the edges inwards to create a thickness. (**Fig.58 – 60**)

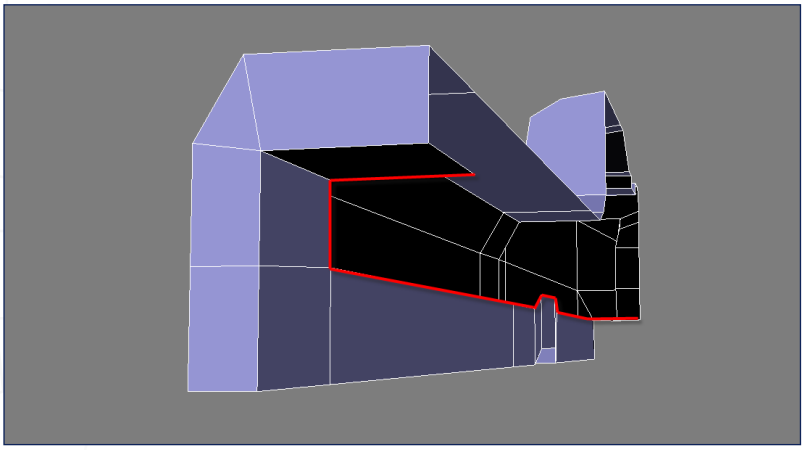


Fig 59

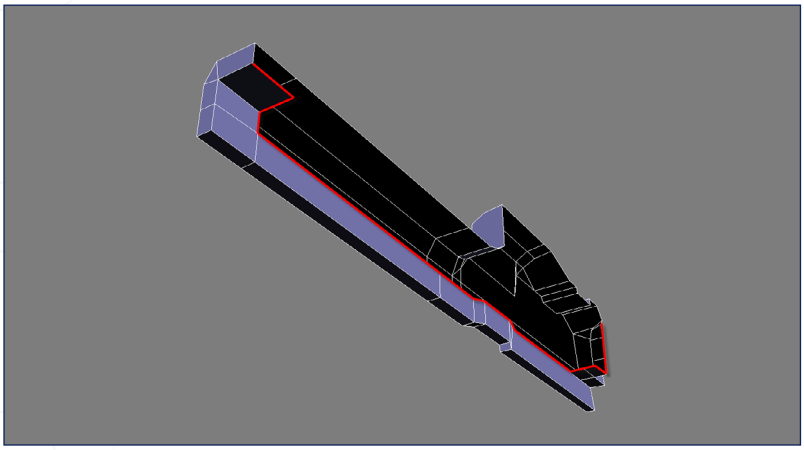
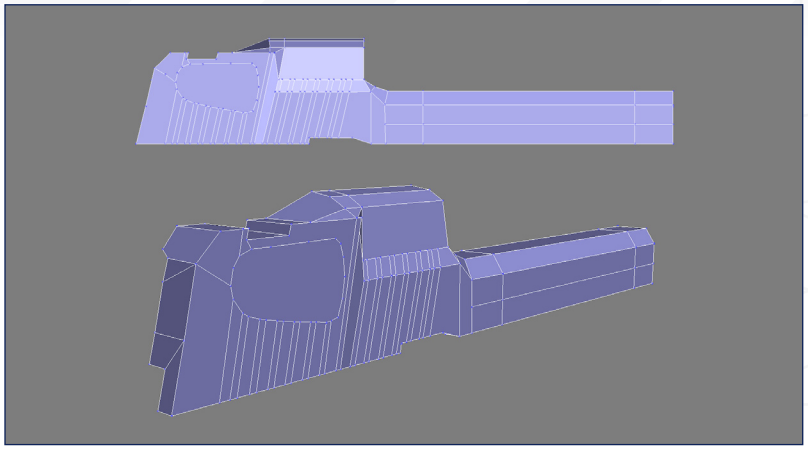


Fig 60

61. Add some cuts on the front view to match the original reference picture. (**Fig.61**)

Fig 61



62-63. Finally select the new faces and extrude them to add volume. (**Fig.62 – 63**)

Fig 62

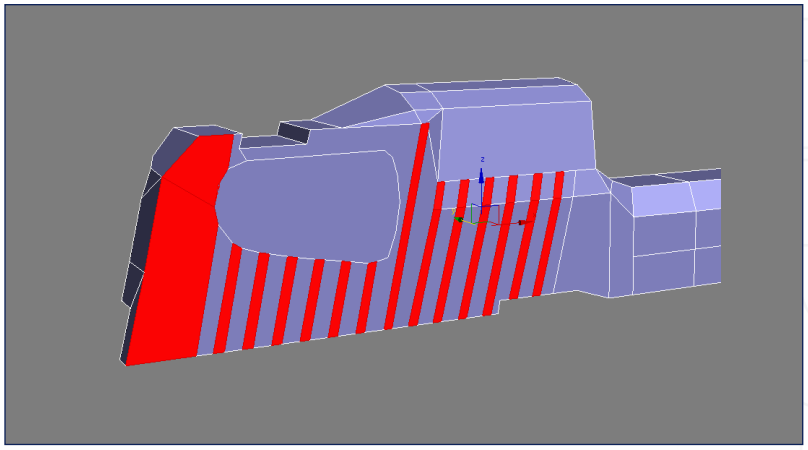
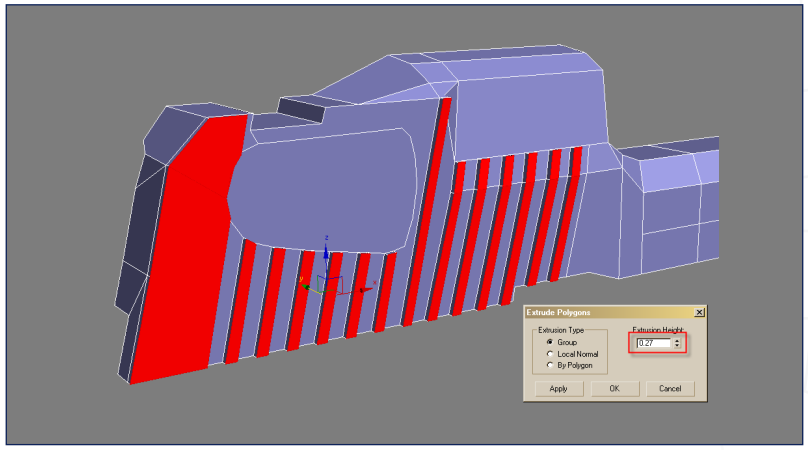
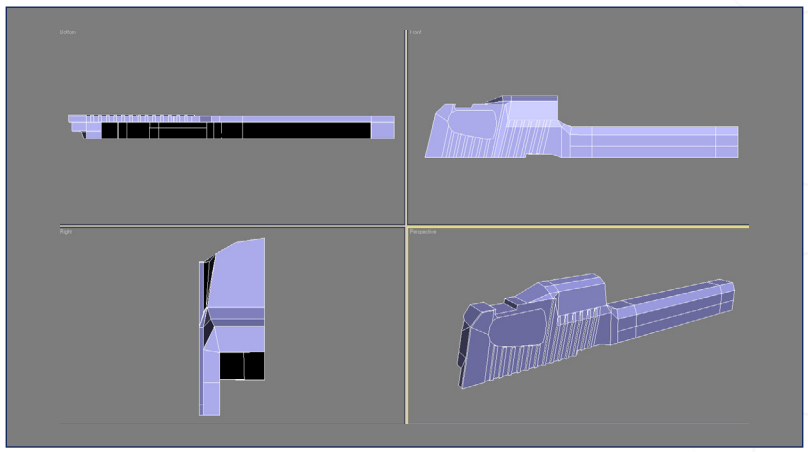


Fig 63



64. The current preview from different angles. (**Fig.64**)

Fig 64



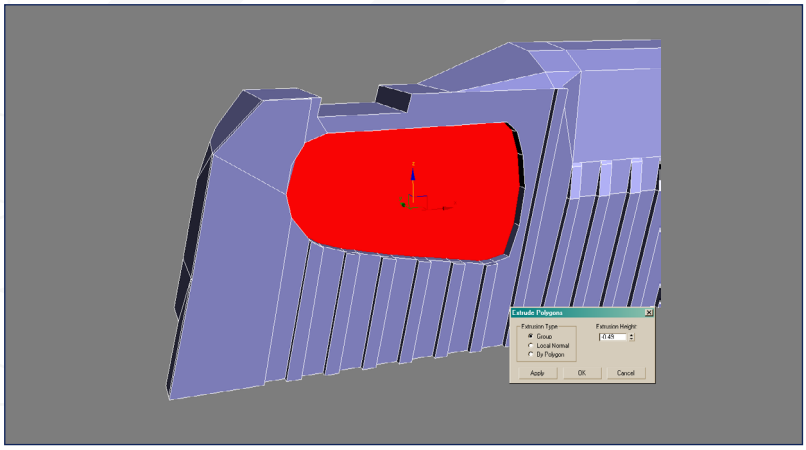


Fig 65

65. Select the face as shown below and extrude it inwards to create a cavity. (**Fig.65**)

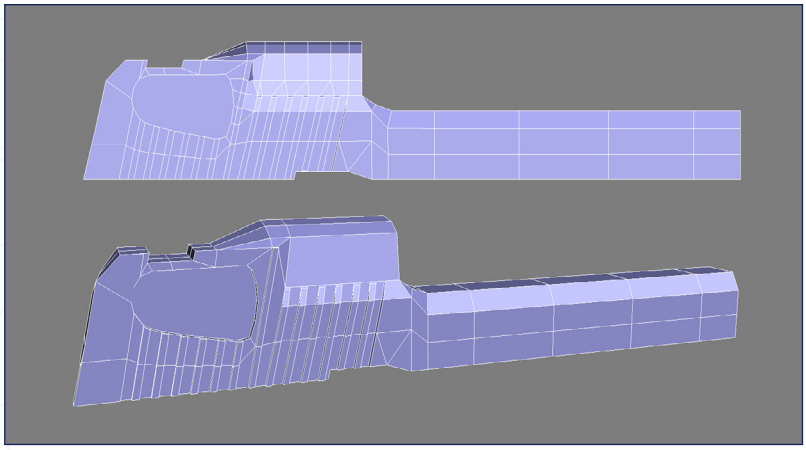


Fig 66

66-67. Add more cuts to polish the object (**Fig.66 – 67**)

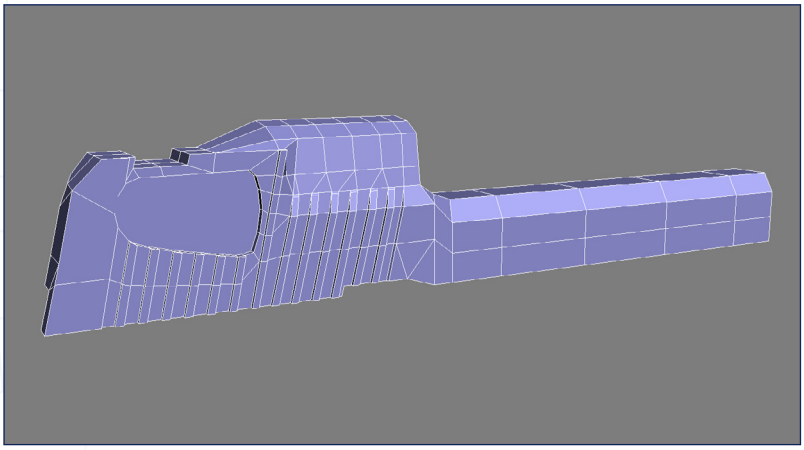


Fig 67

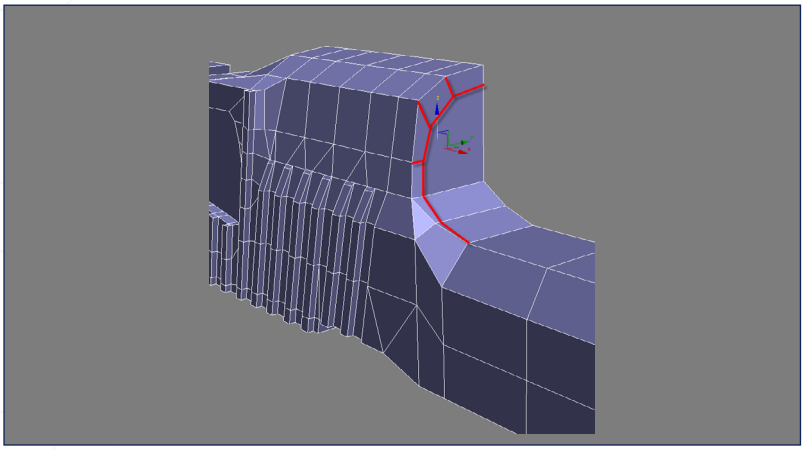


Fig 68

68. Cut some edges inside to improve the barrel connection. We are not going to create a working weapon but it's still good to keep the main areas accurate. (**Fig.68**)

69-70. Extrude the faces and polish them to maintain smooth curves. Don't hesitate to display the barrel to test the connection. (**Fig.69 – 70**)

Fig 69

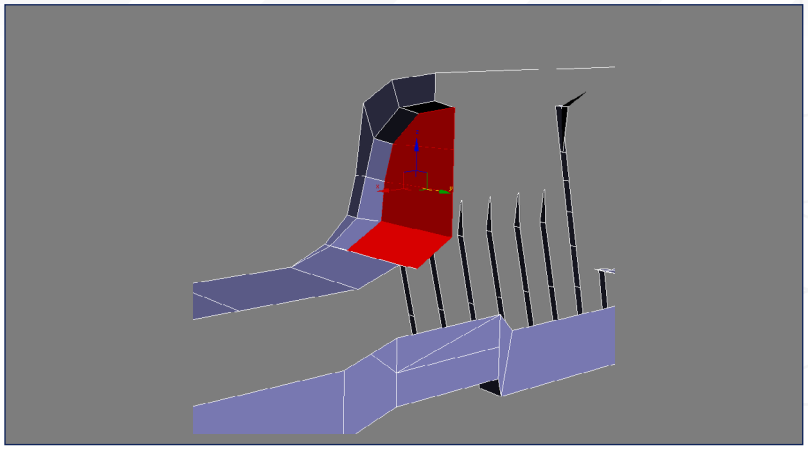
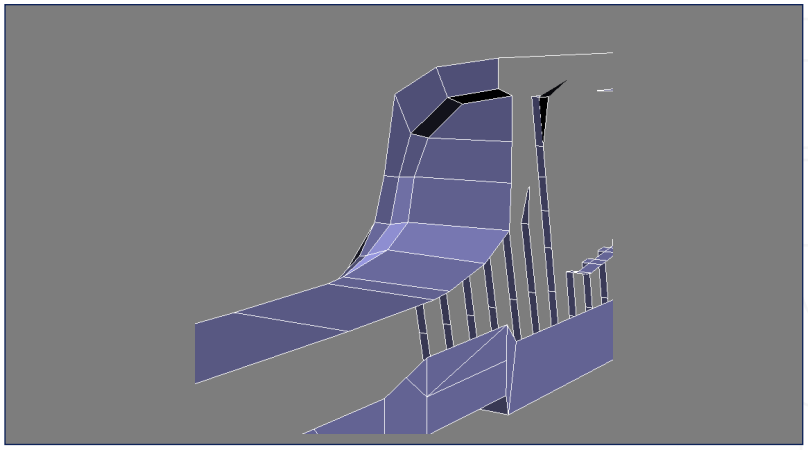


Fig 70



71-72. In order to form a sharp edge, create a cut as shown below. (**Fig.71 – 72**)

Fig 71

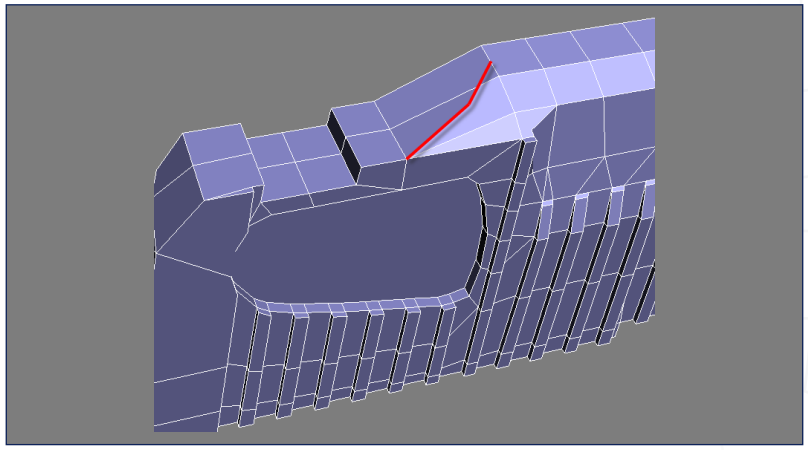
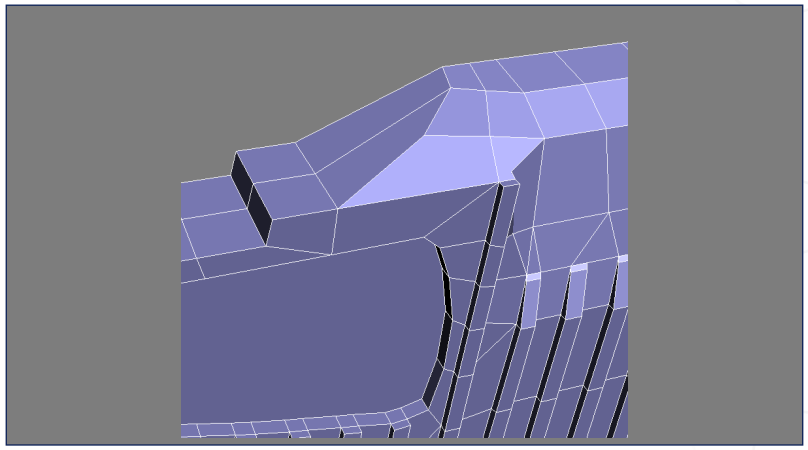


Fig 72



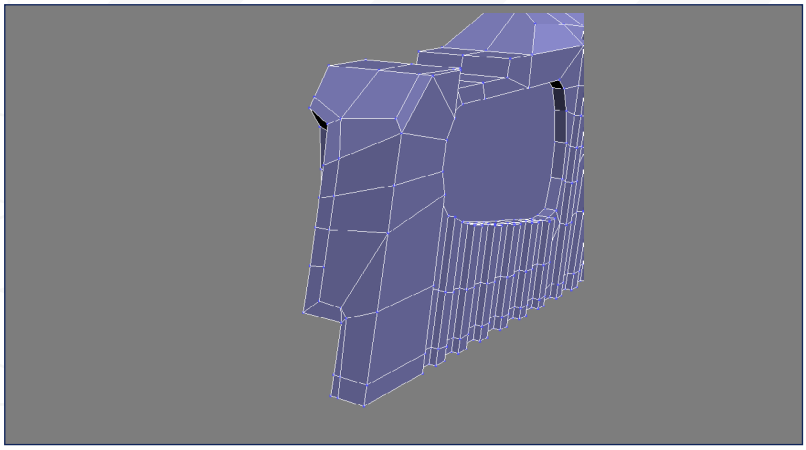


Fig 73

73. Polish the front of the object. (**Fig.73**)

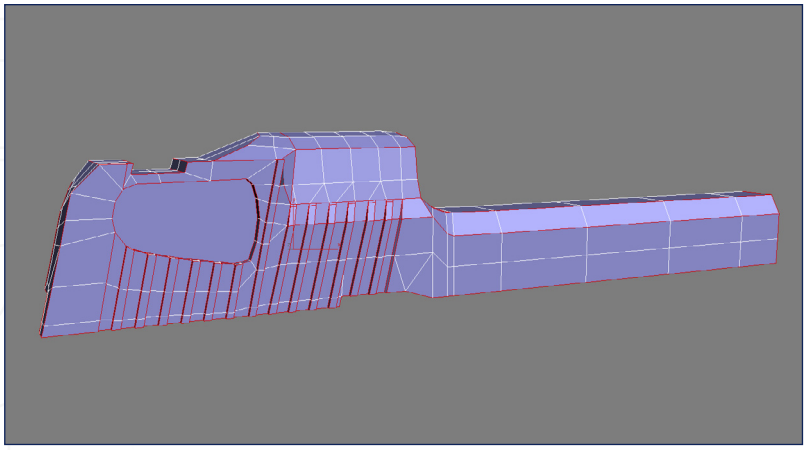


Fig 74

74-75. Once again we are going to chamfer edges to increase the quality. (**Fig.74 – 75**)

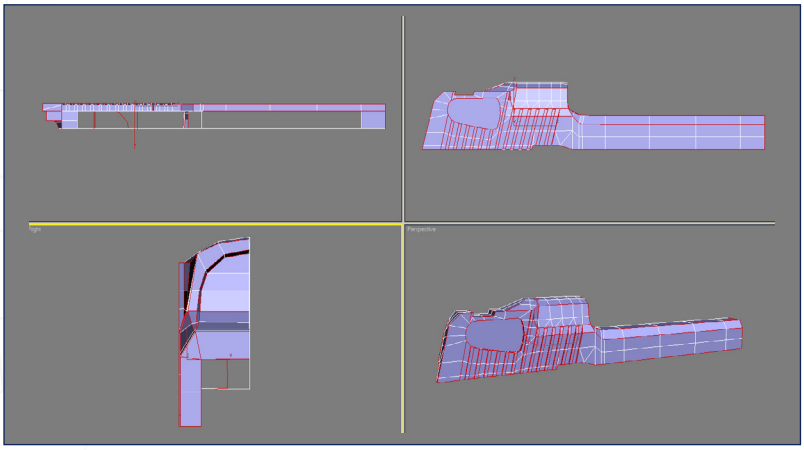


Fig 75

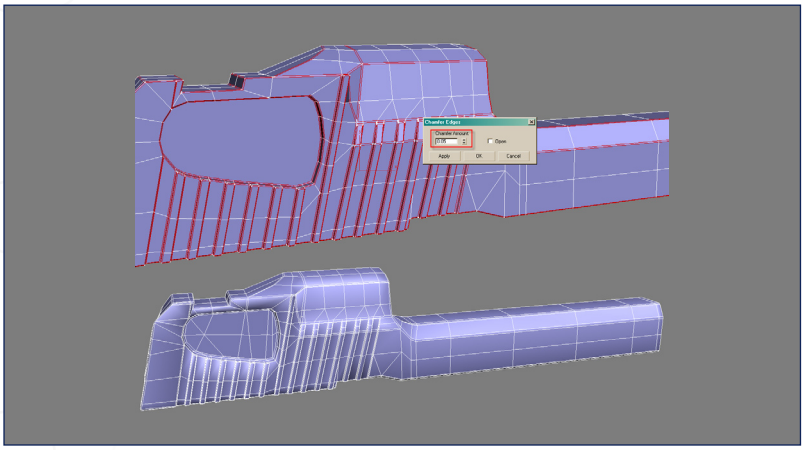
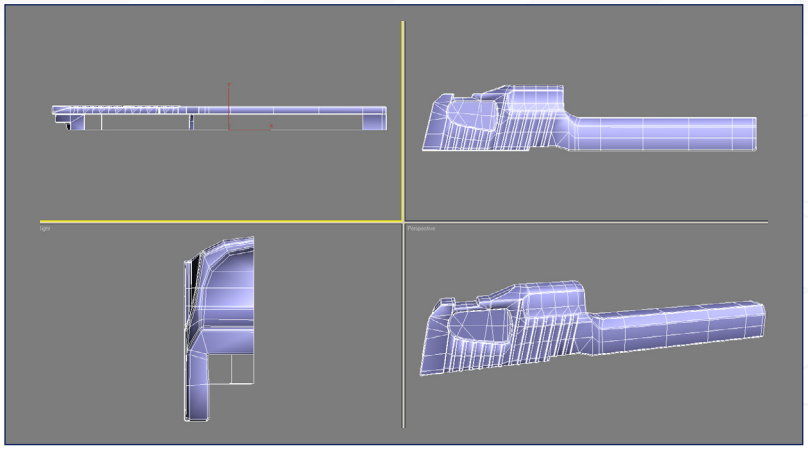


Fig 76

76. Chamfer and polish the final piece. (**Fig.76**)

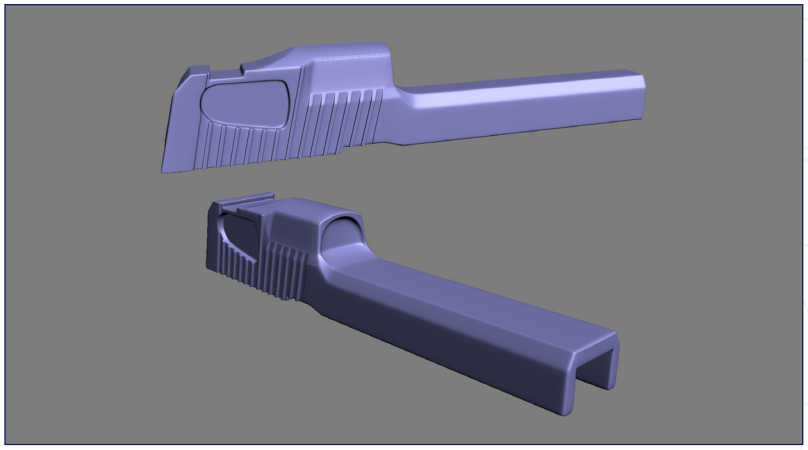
77. Some more screenshots to help you target difficult areas. (**Fig.77**)

Fig 77



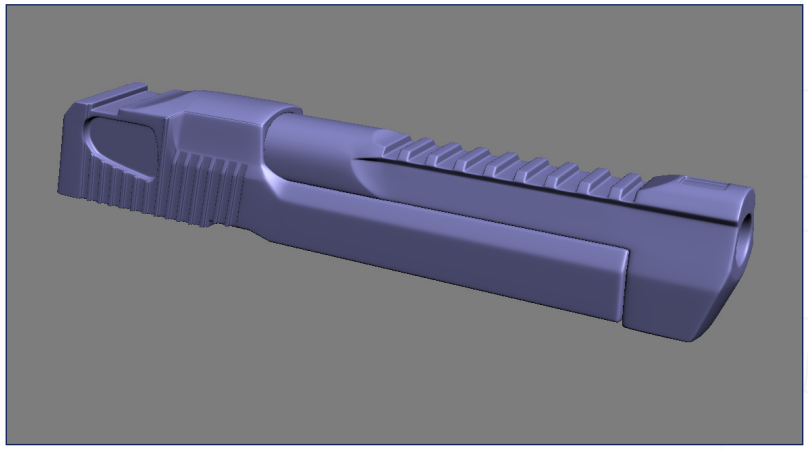
78. The final object after smoothing. (**Fig.78**)

Fig 78



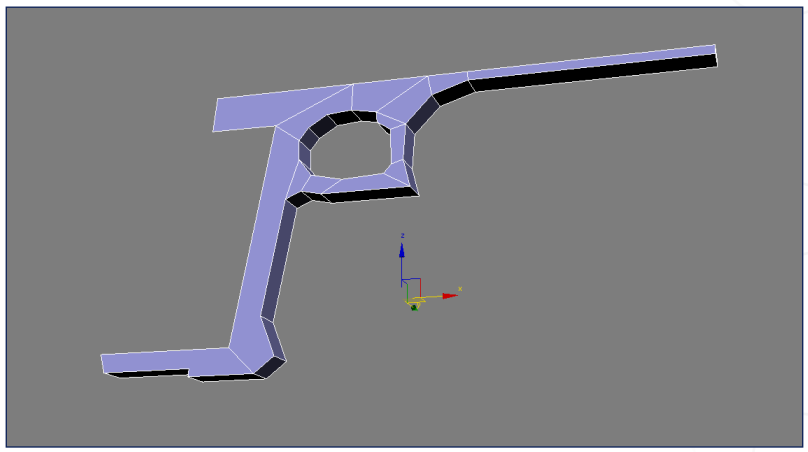
79. Add the barrel to see how they work together. (**Fig.79**)

Fig 79



80. The pistol handle. (**Fig.80**)

Fig 80



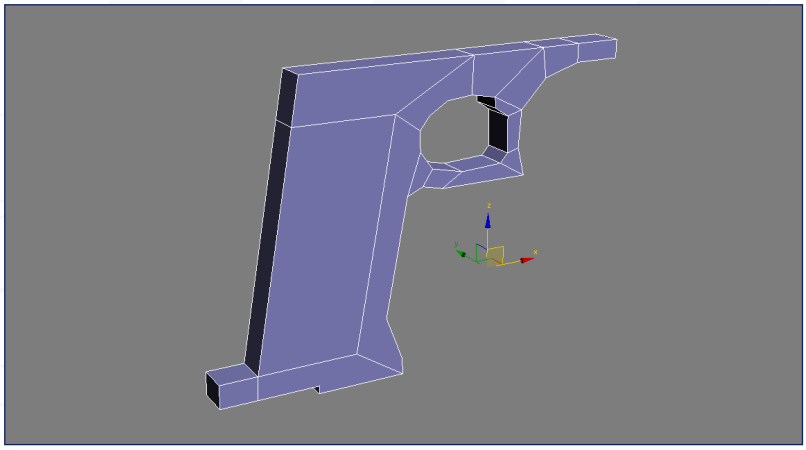


Fig 81

81. The same kind of preliminary cut as we did above to shape the main volume. (**Fig.81**)

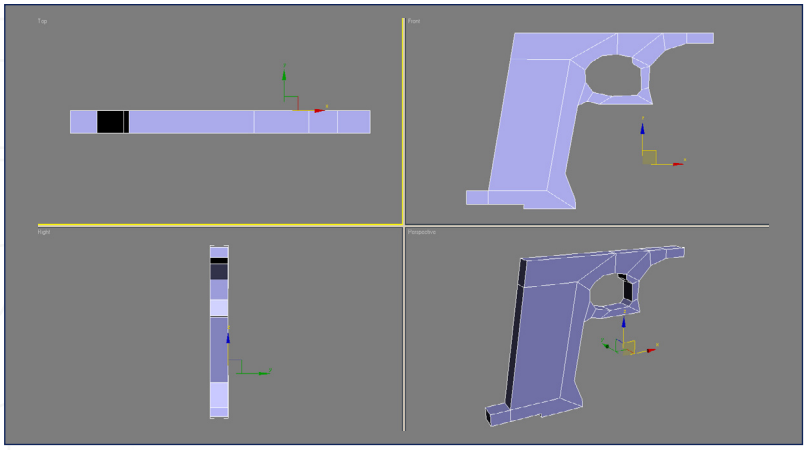


Fig 82

82. Some more views. (**Fig.82**)

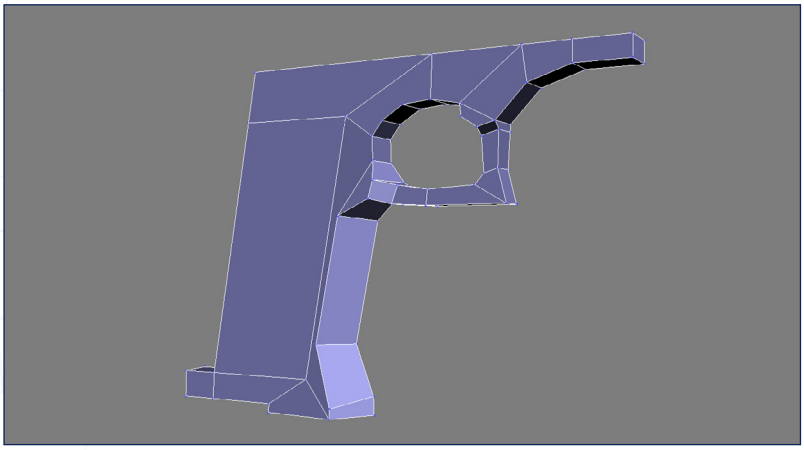


Fig 83

83-84-85. Try to keep quads as much as possible. (**Fig.83 – 85**)

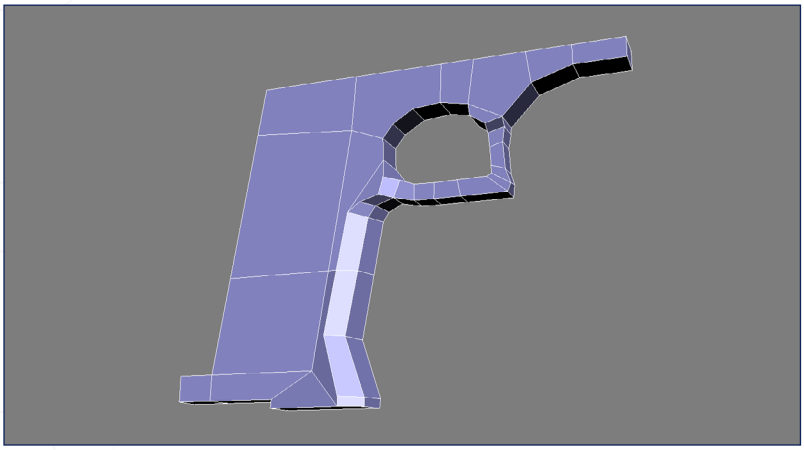
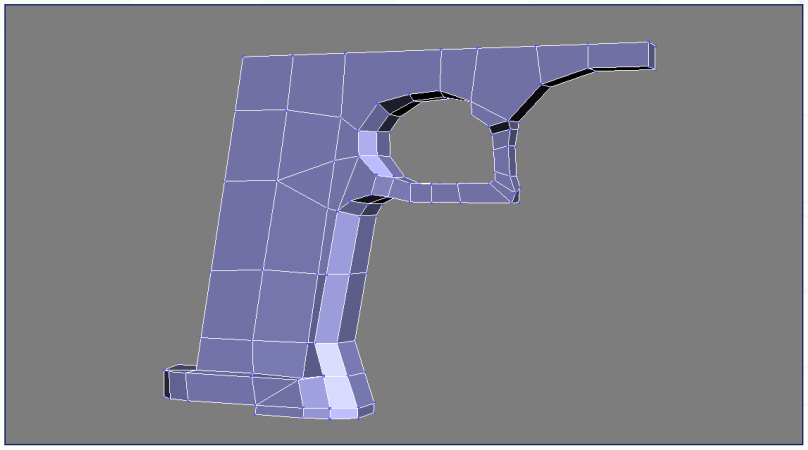


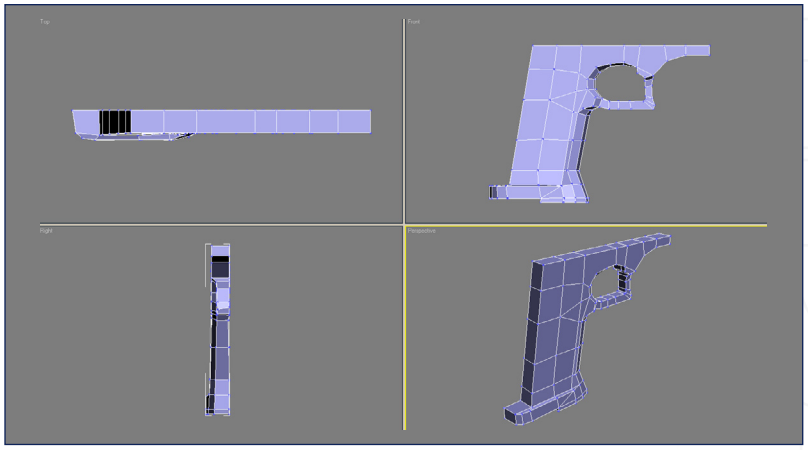
Fig 84

Fig 85



86. Current stage. (**Fig.86**)

Fig 86



87-88. Prepare and remove an area to make way for inserting an object later. (**Fig.87 – 88**)

Fig 87

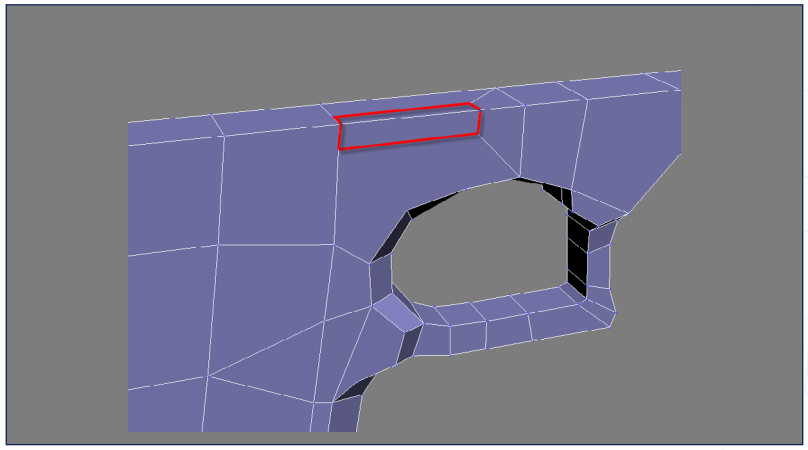
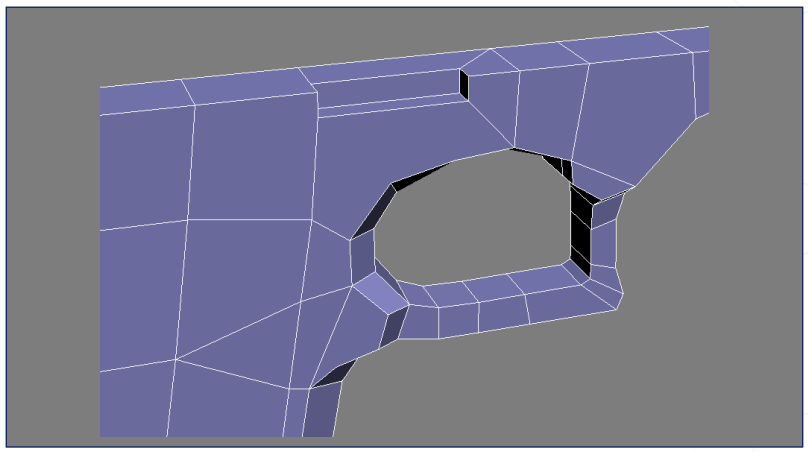


Fig 88



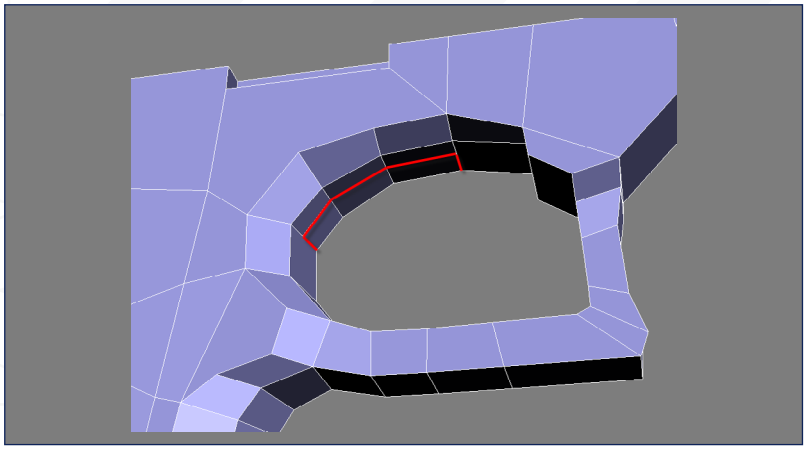


Fig 89

89-90. Prepare and extrude a hole for the trigger. (**Fig.89 – 90**)

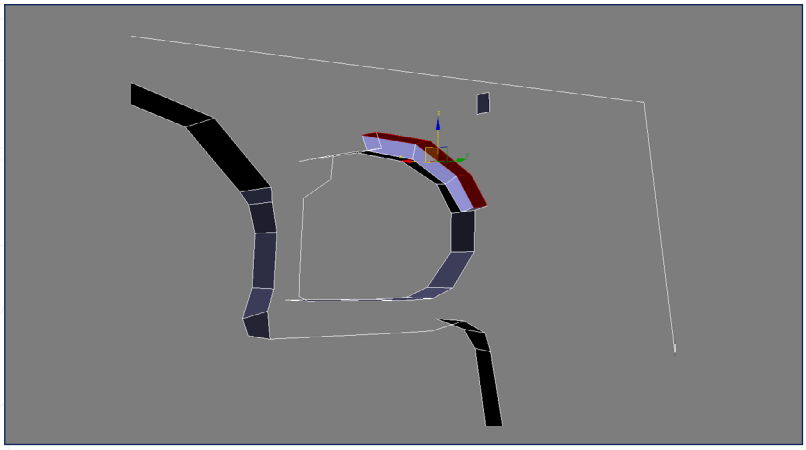


Fig 90

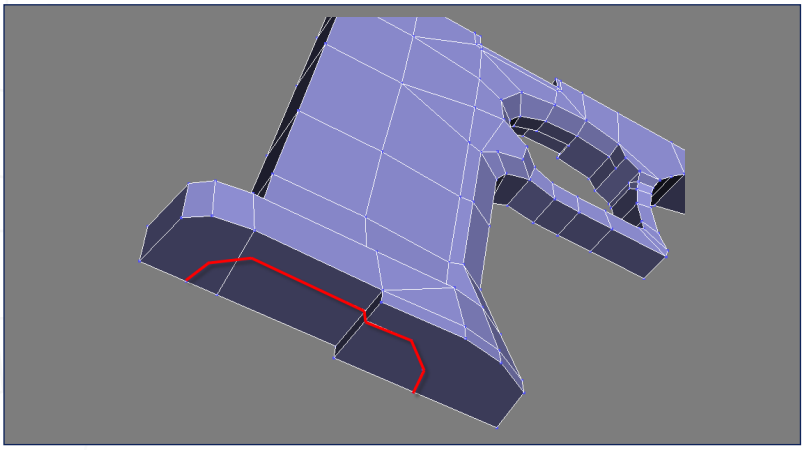


Fig 91

91-92-93. Do the same for the magazine. (**Fig.91 – 93**)

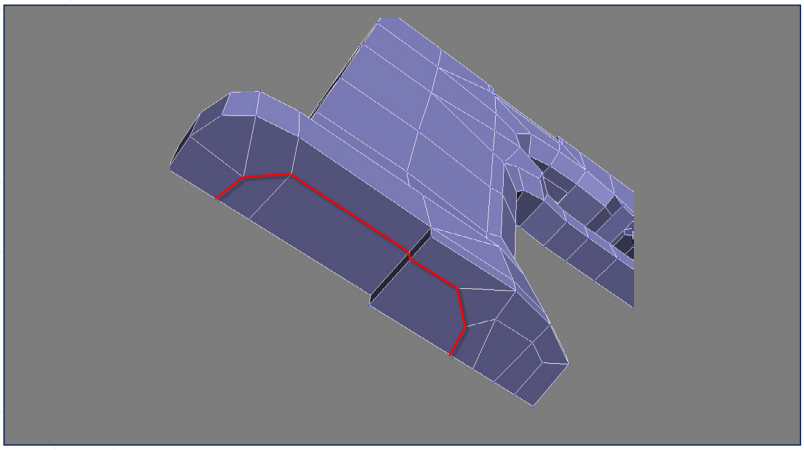
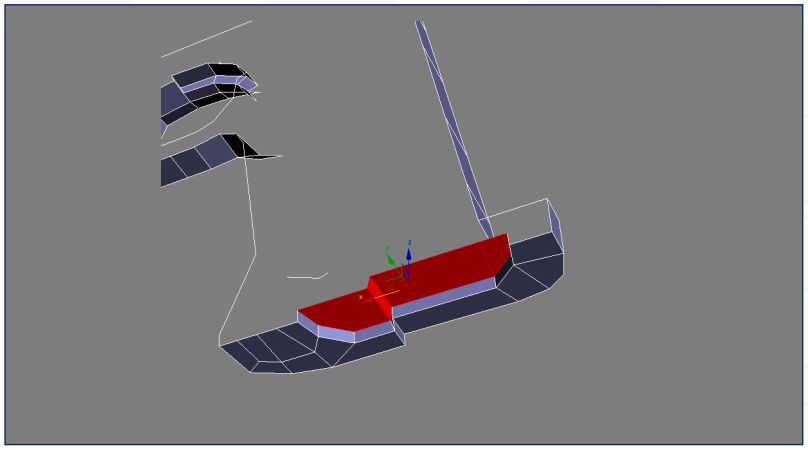


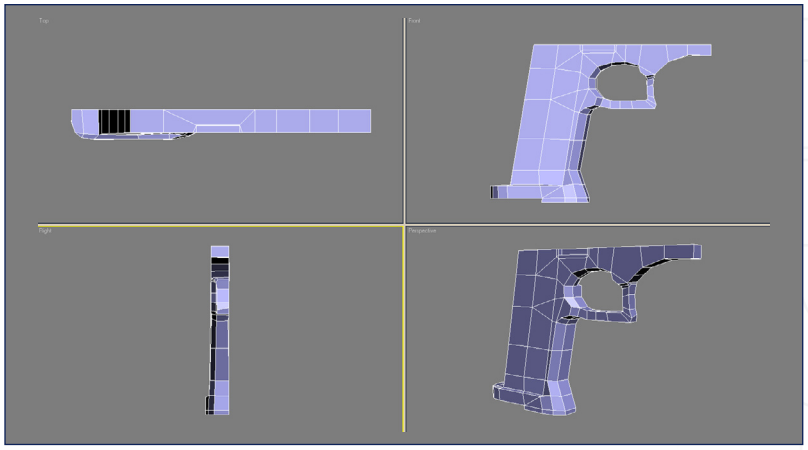
Fig 92

Fig 93



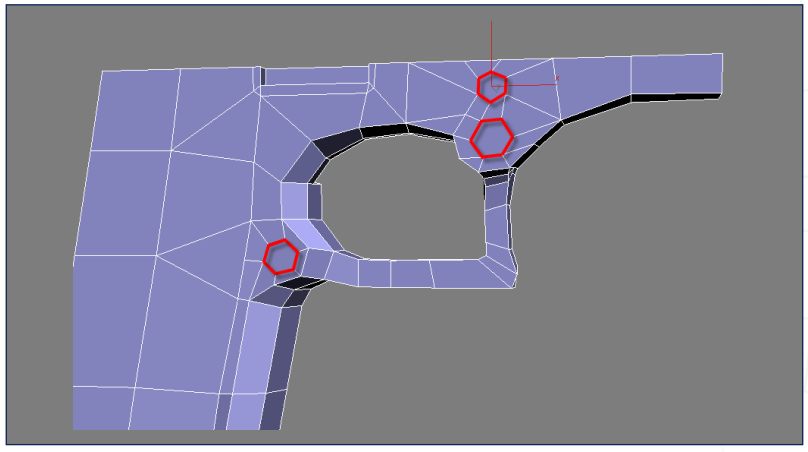
94. A current preview. (**Fig.94**)

Fig 94



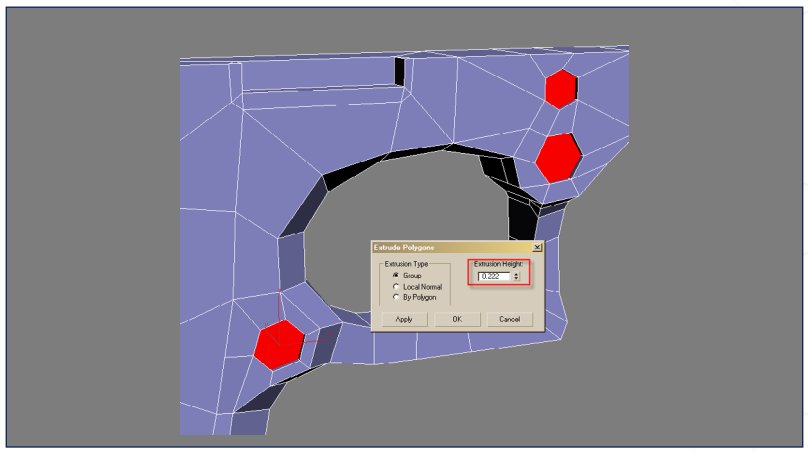
95. Now let's add some buttons on the piece by cutting some hexagons in the front view. (**Fig.95**)

Fig 95



96-97-98-99-100. Using the following steps, create the buttons. (**Fig.96 – 100**)

Fig 96



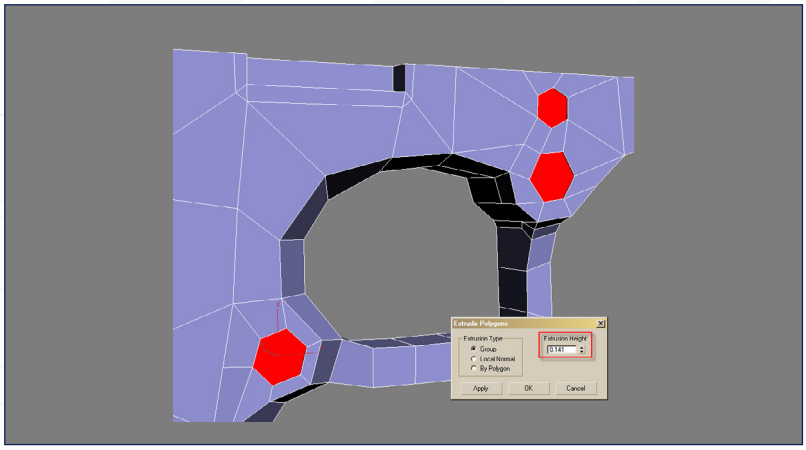


Fig 97

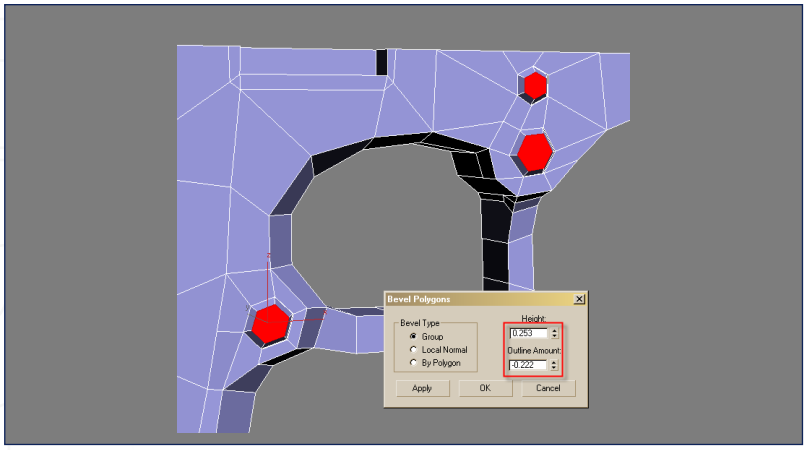


Fig 98

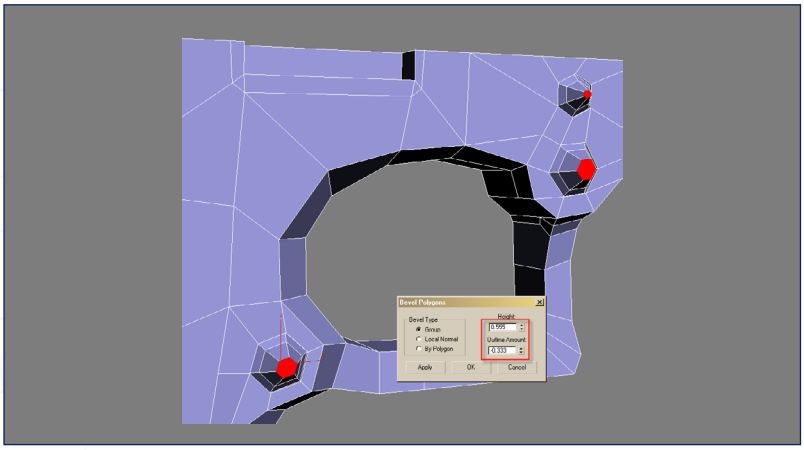


Fig 99

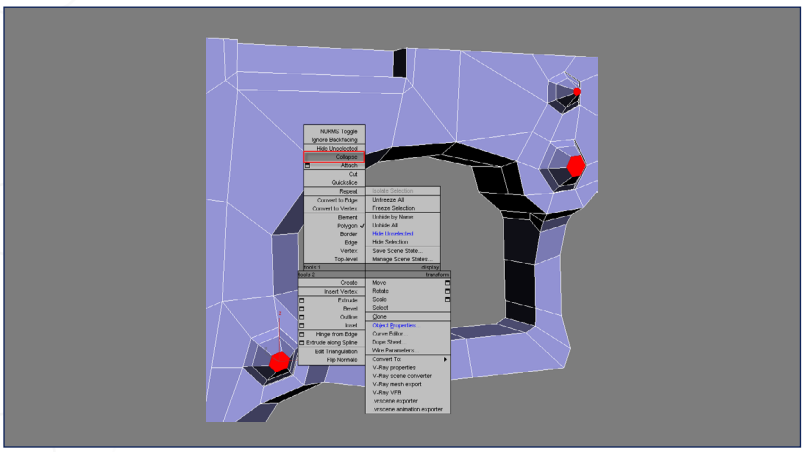
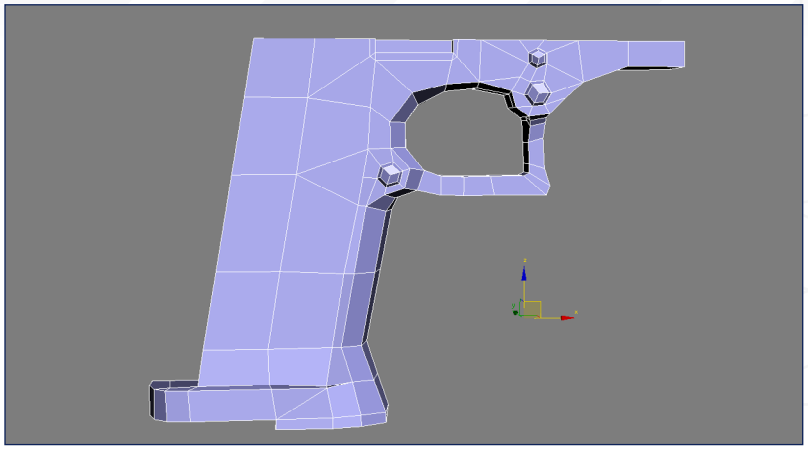


Fig 100

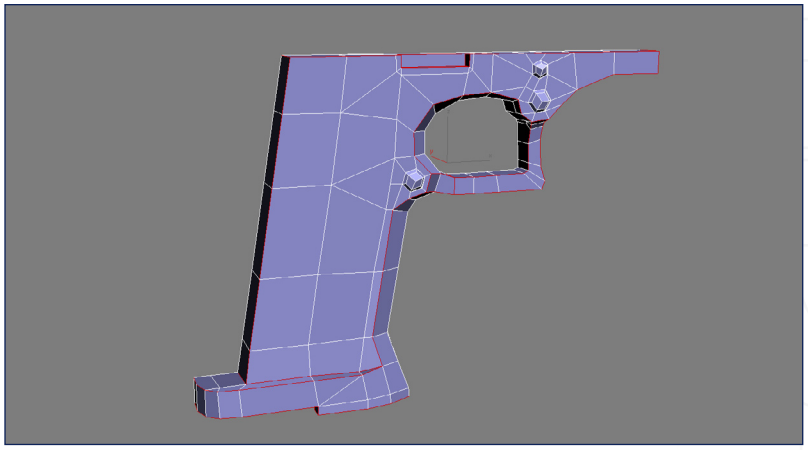
101. Preview of the buttons after the faces are collapsed. (**Fig.101**)

Fig 101



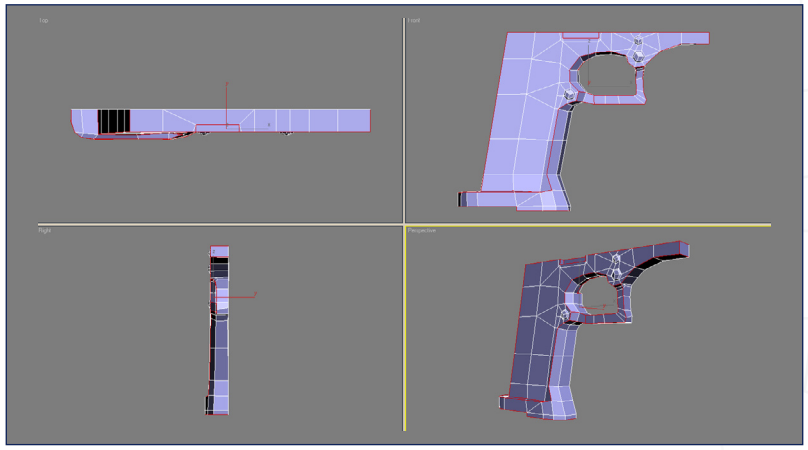
102. Now it's time now to select the edges to chamfer. (**Fig.102**)

Fig102



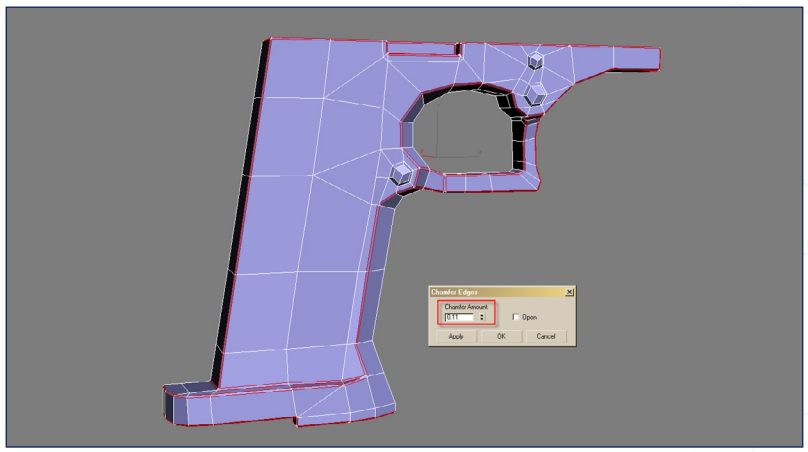
103. Here they are from several angles. (**Fig.103**)

Fig103



104-105. Here is a preview of the chamfered edges and final object. (**Fig.104 – 105**)

Fig 104



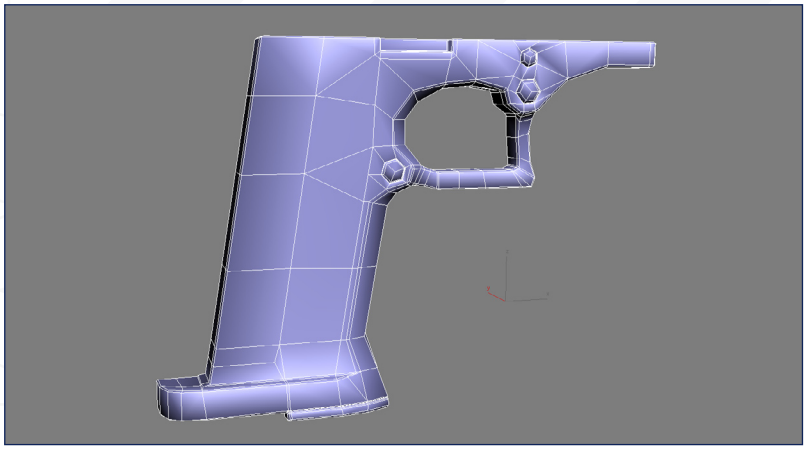


Fig 105

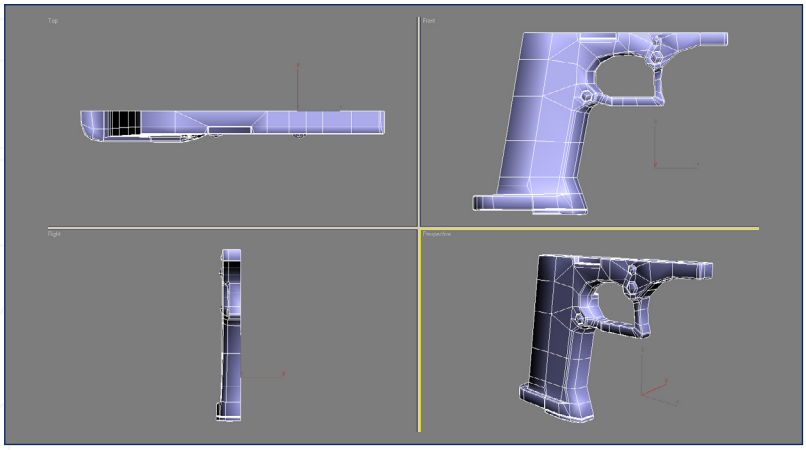


Fig 106

106. The final object. (**Fig.106**)

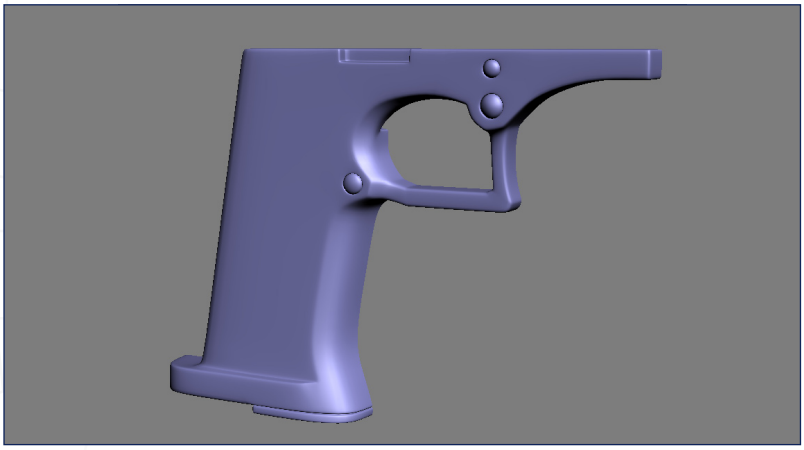


Fig 107

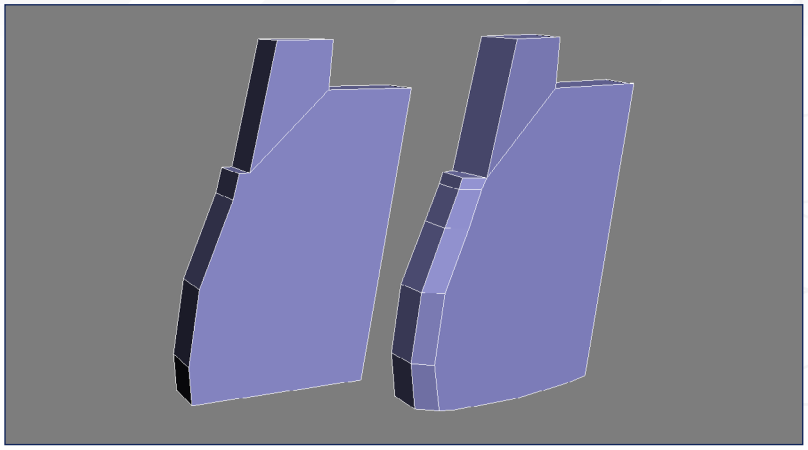
107-108. The final smoothed preview along with the previously created pieces. (**Fig.107 – 108**)



Fig 108

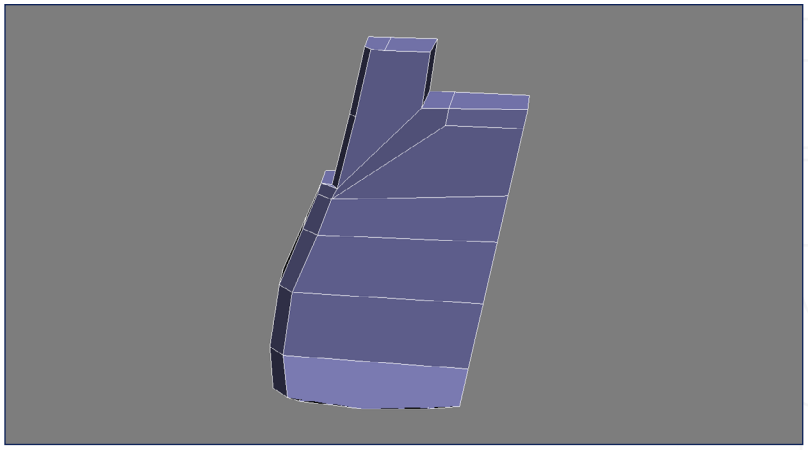
109. The next piece to create is the grip. (**Fig.109**)

Fig 109



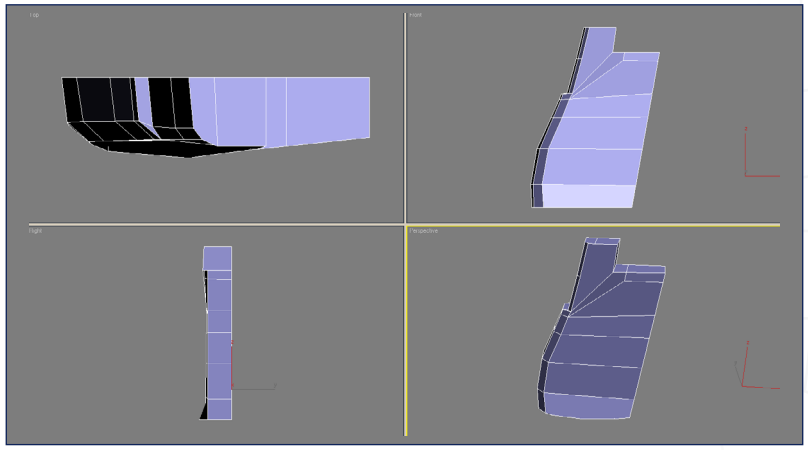
110. Add some subdivisions to prepare the different regions. (**Fig.110**)

Fig 110



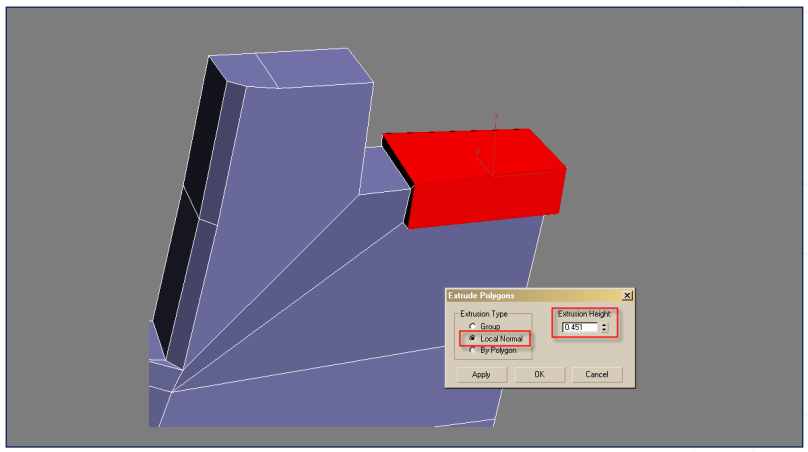
111. Some further angles. (**Fig.111**)

Fig 111



112. Prepare and extrude the area shown below to match the reference. (**Fig.112**)

Fig 112



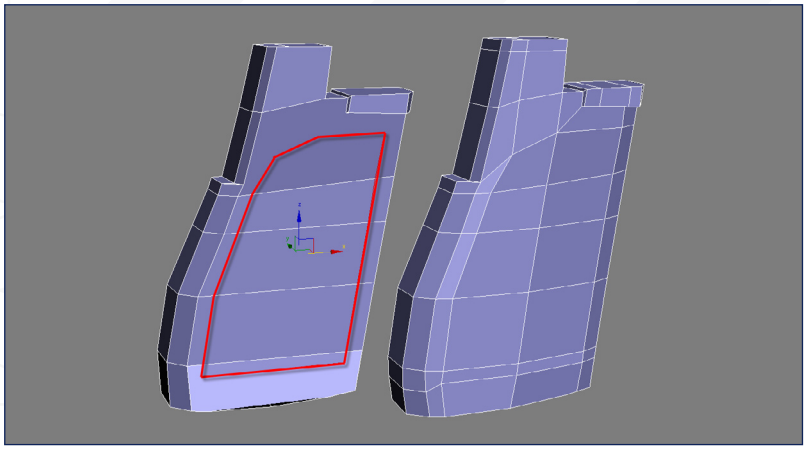


Fig 113

113. Cut the area which will represent the grip and clean up the object to create quads. (**Fig.113**)

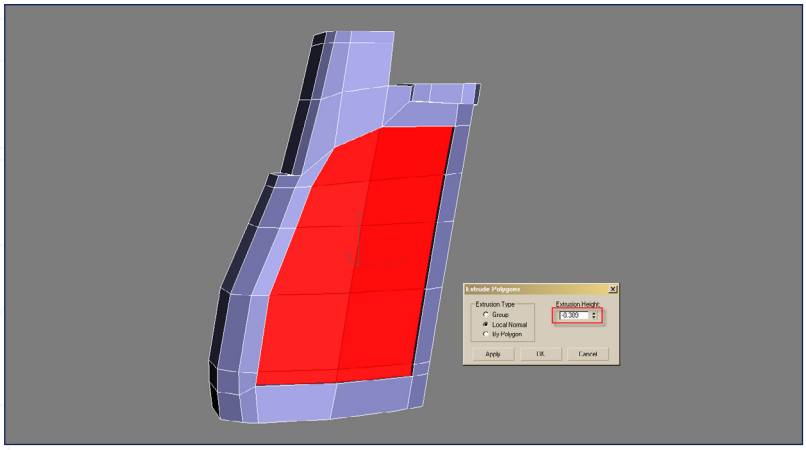


Fig 114

114. We are not going to reproduce the grip exactly as seen in the reference in order that I can introduce a different technique. Select the area and extrude it. (**Fig.114**)

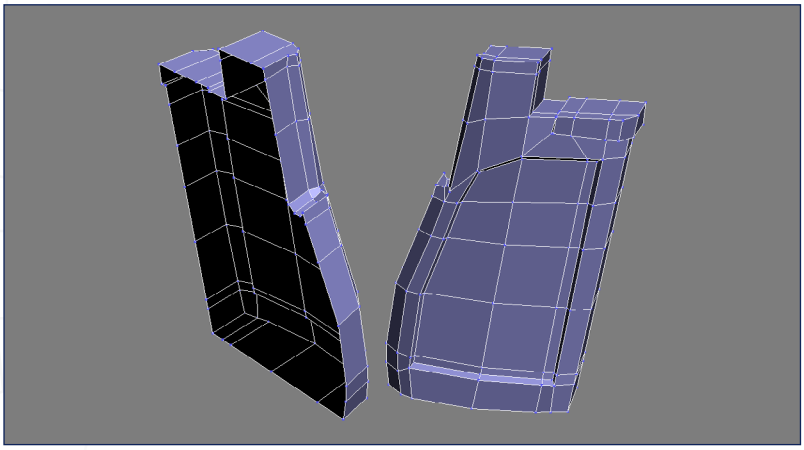


Fig 115

115-116. A current preview. (**Fig.115 – 116**)

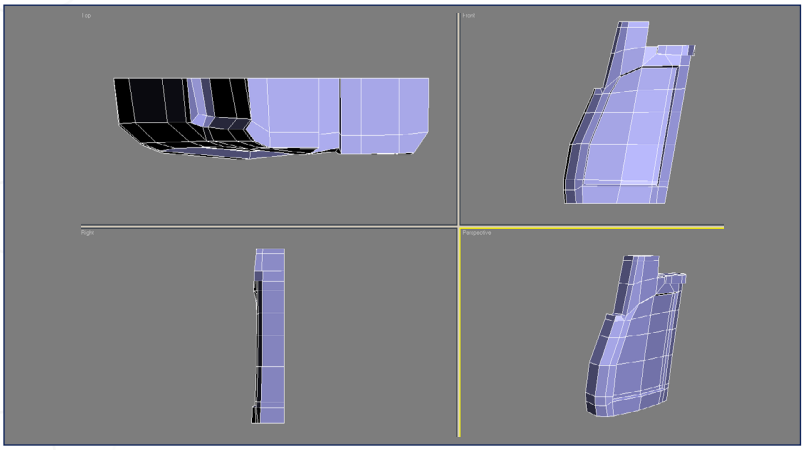


Fig 116

117-118. Once again, select the edges we are going to chamfer. (**Fig.117 – 118**)

Fig 117

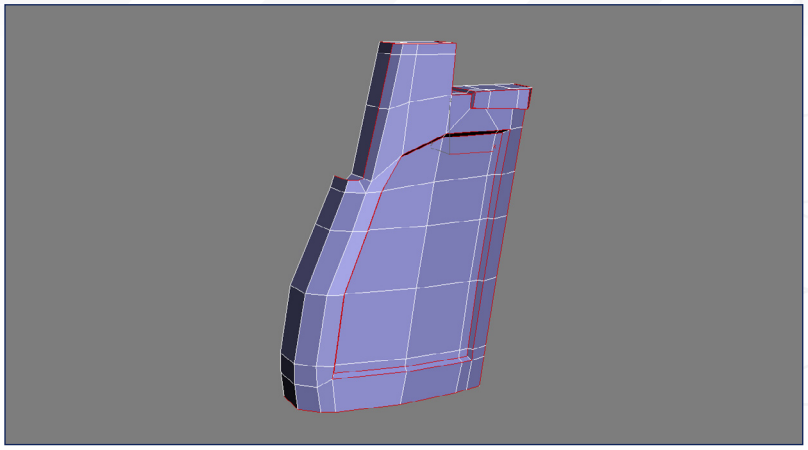
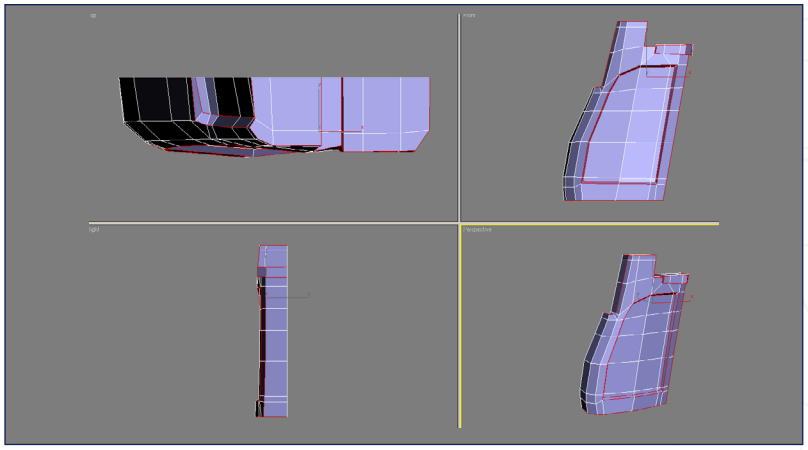
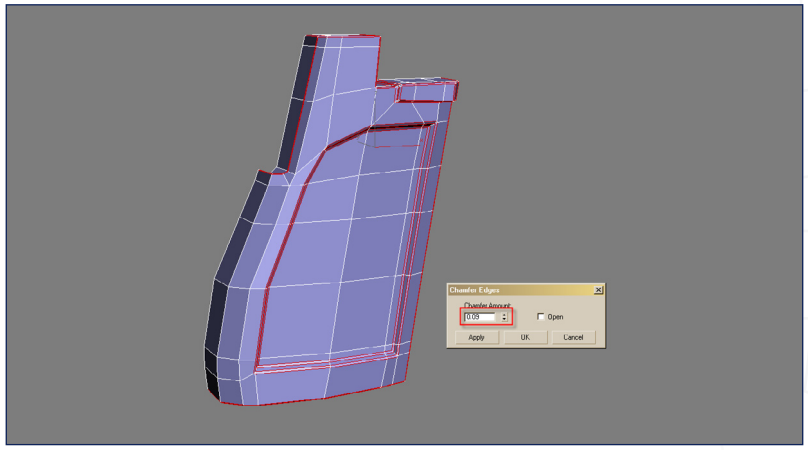


Fig 118



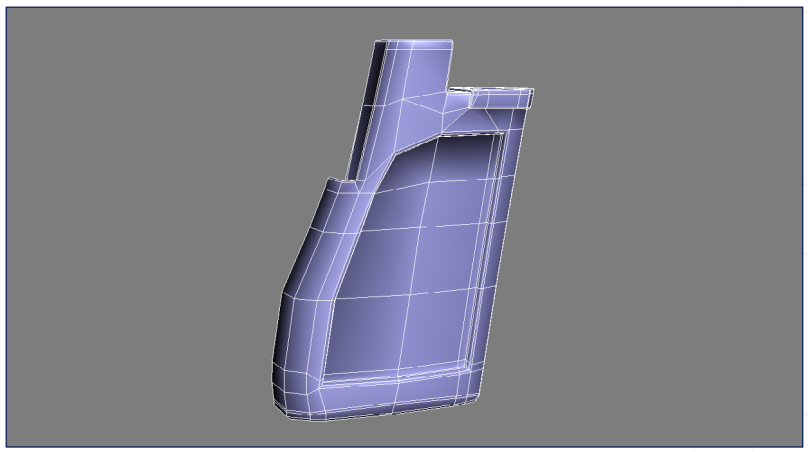
119. Now let's chamfer them. (**Fig.119**)

Fig 119



120-121. Here is the stage after a quick clean up to maintain quads. (**Fig.120 – 121**)

Fig 120



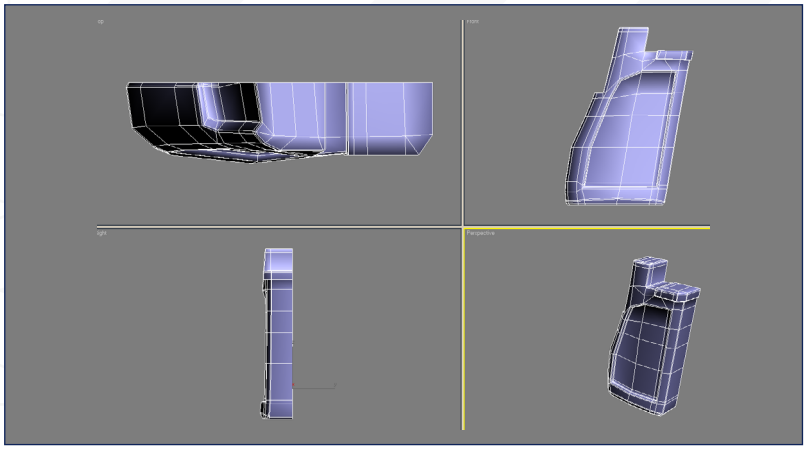


Fig 121

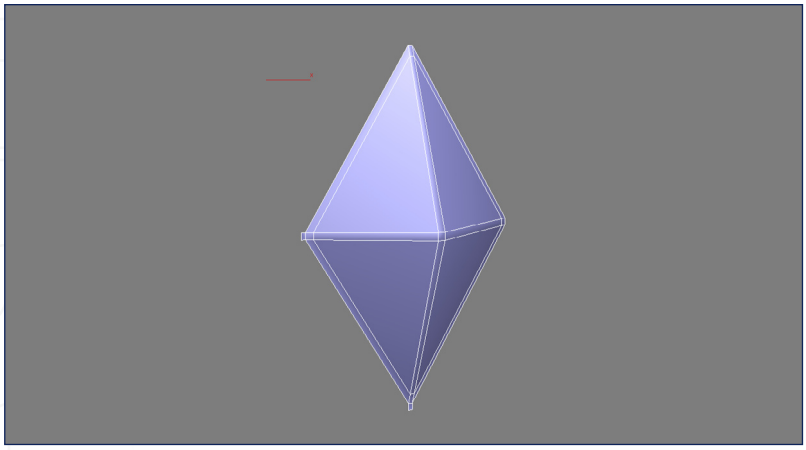


Fig 122

122. We are now going to create the grip texture. First create one element of what will become a much larger pattern. You can try to create your own but keep it simple because it will be quite small in the end. Notice the small quads on the left and bottom of the object; they are there in order to duplicate it later without any visible holes. (**Fig.122**)

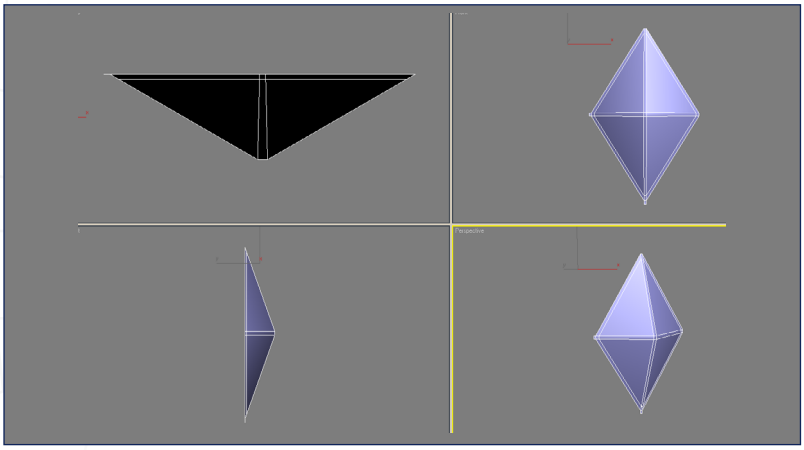


Fig 123

123. Some different angles. (**Fig.123**)

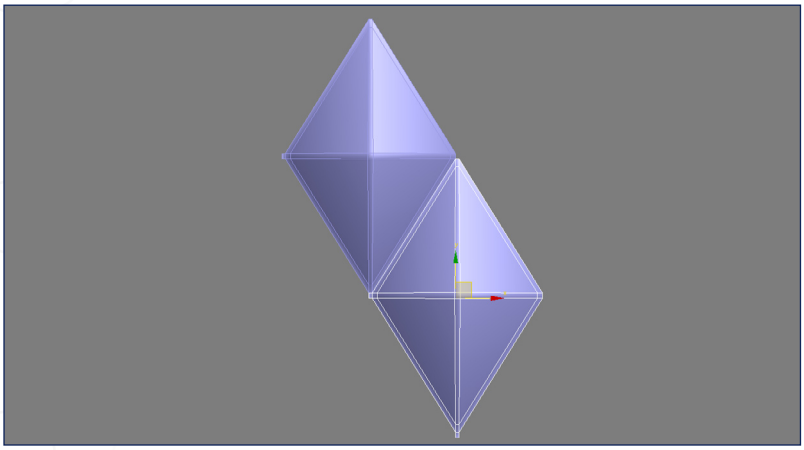
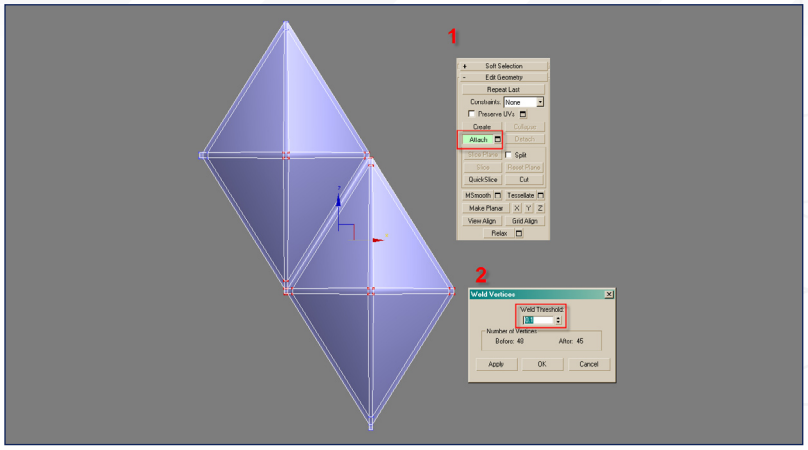


Fig 124

124. By pressing Shift, first move the object to the bottom right. (**Fig.124**)

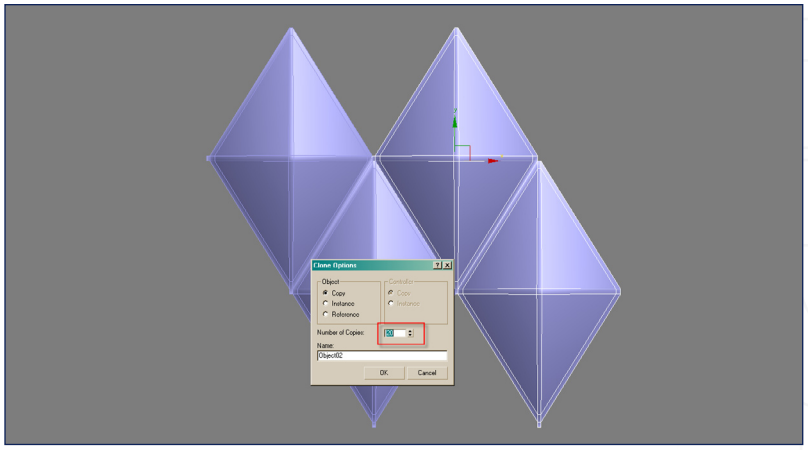
125. Attach the new one to its parent, and then select all the vertices to weld the ones occupying the same position. (**Fig.125**)

Fig 125



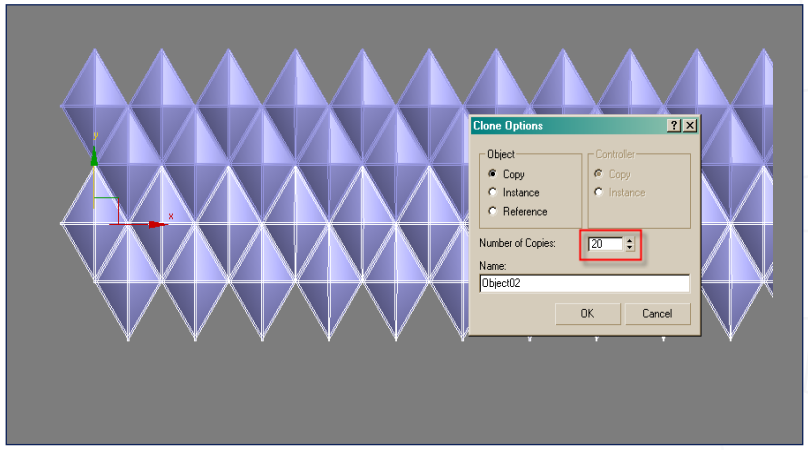
126. Do the same as previously done (see 124) but change Number of Copies to 20 to create the initial row. (**Fig.126**)

Fig 126



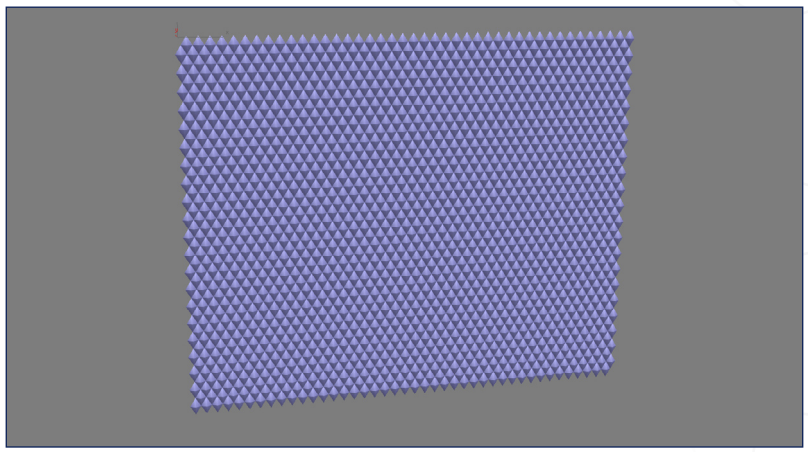
127. Follow the same procedure as above but this time vertically. (**Fig.127**)

Fig 127



128. You should now have a large square pattern. (**Fig.128**)

Fig 128



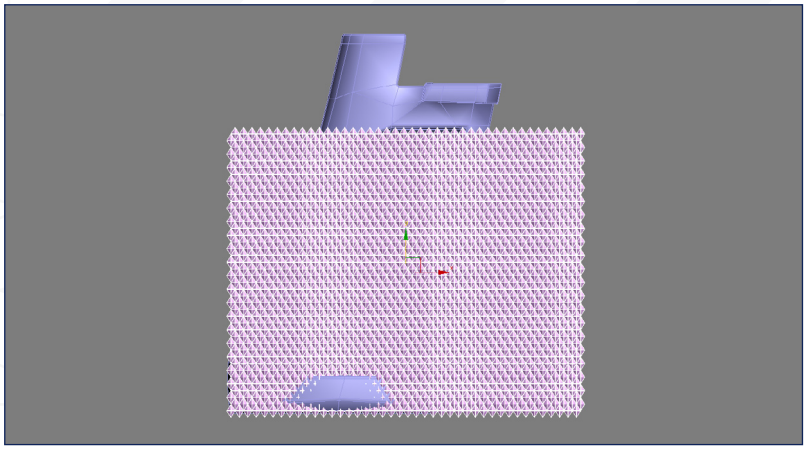


Fig 129

129. Display the recent handgun piece and move you square pattern to cover the grip area. (**Fig.129**)

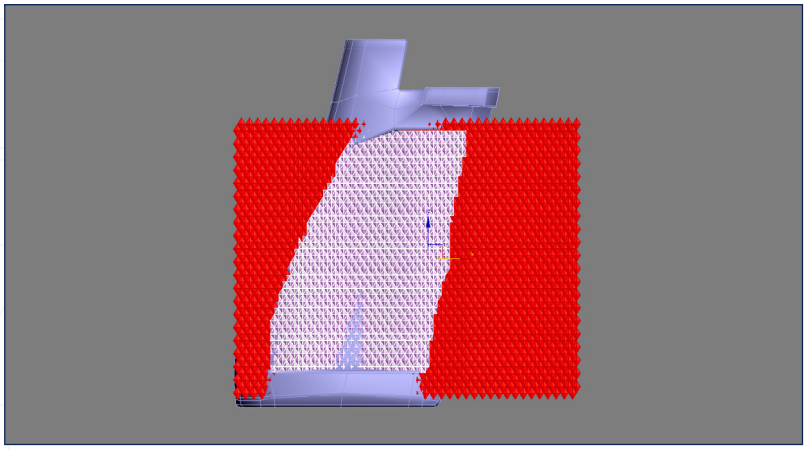


Fig 130

130- 131. Select the faces within the grip area and delete them. (**Fig.130 – 131**)

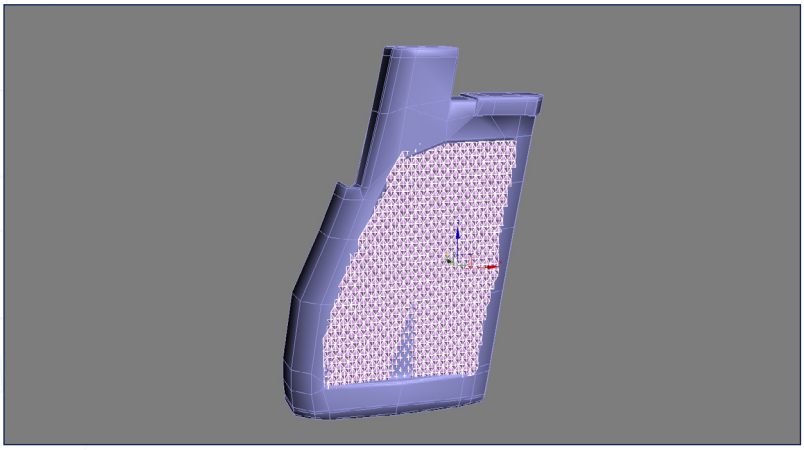


Fig 131

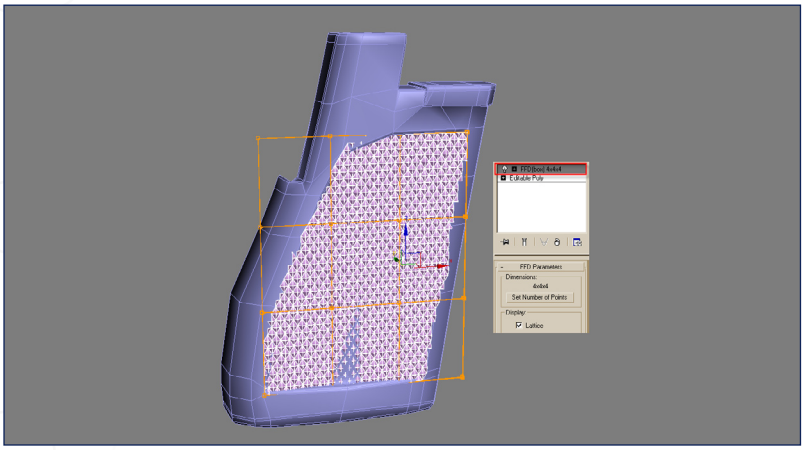
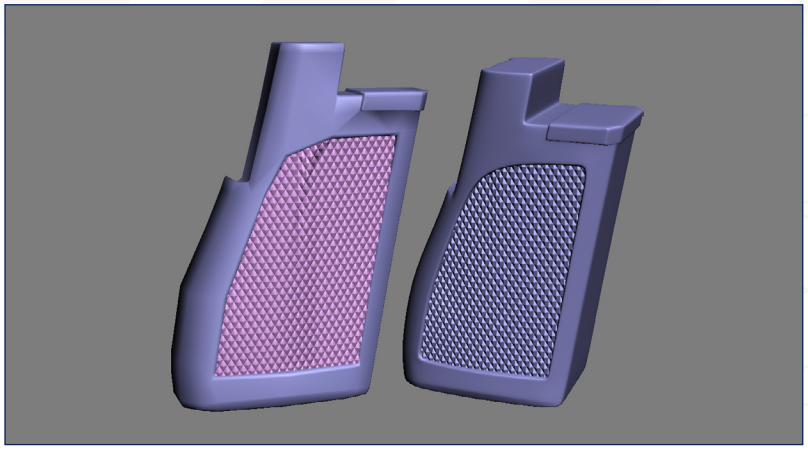


Fig 132

132. Now apply an FFD (box) 4x4x4 modifier to bend and move the grip pattern into its corresponding area. (**Fig.132**)

133. Here is the final preview with both a Symmetry and Meshsmooth modifier applied. (**Fig.133**)

Fig 133



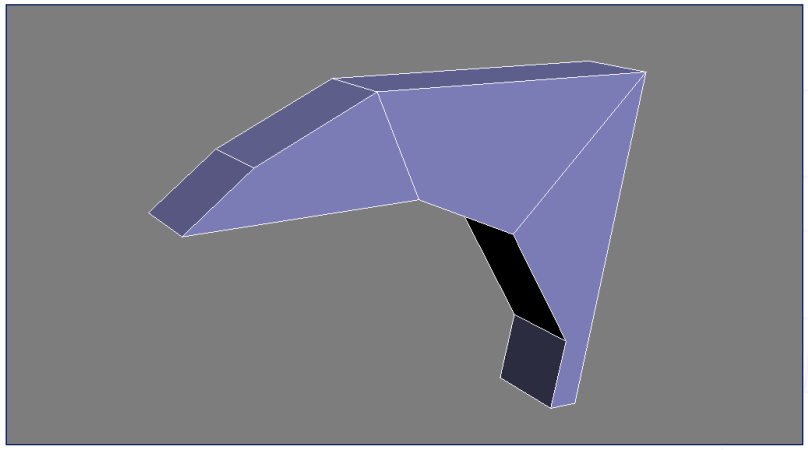
134. Here is the current stage of the handgun along with the grip. (**Fig.134**)

Fig 134



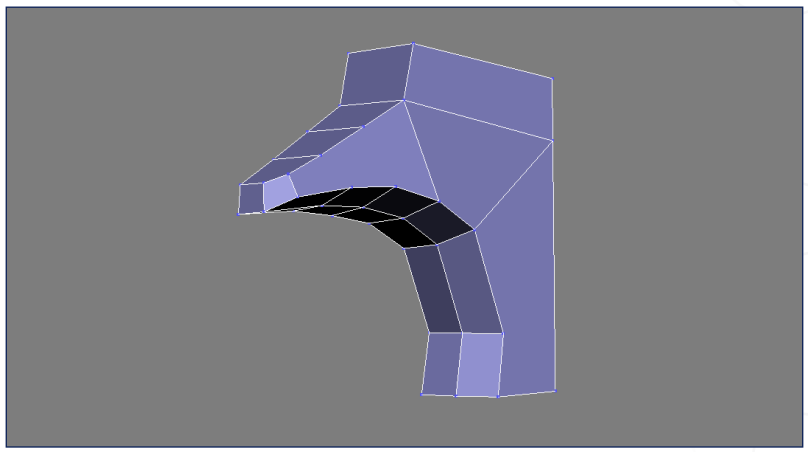
135. Now for the last big piece. (**Fig.135**)

Fig 135



136-137. Add some cuts to create more definition. (**Fig.136 – 137**)

Fig 136



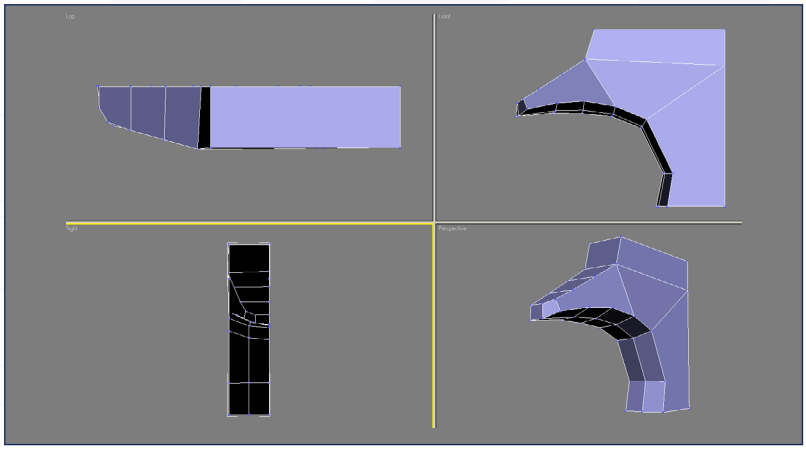


Fig 137

138. To prepare a hole, cut the area as shown below. At the same time fix any potential n-gons. (**Fig.138**)

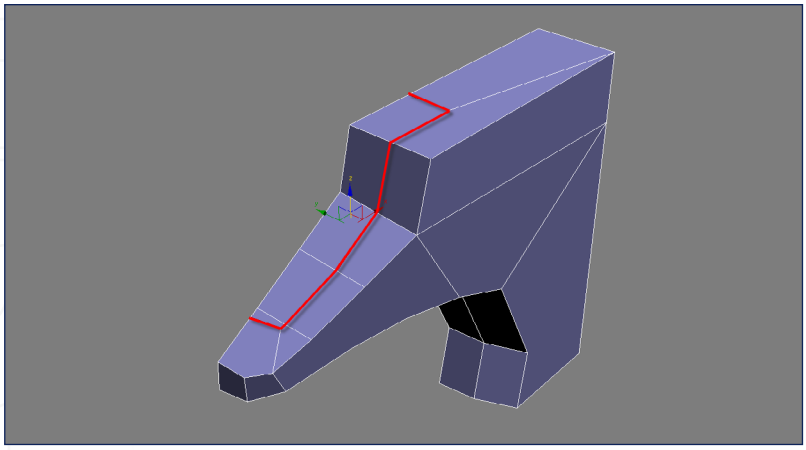


Fig 138

139. Extrude the area. (**Fig.139**)

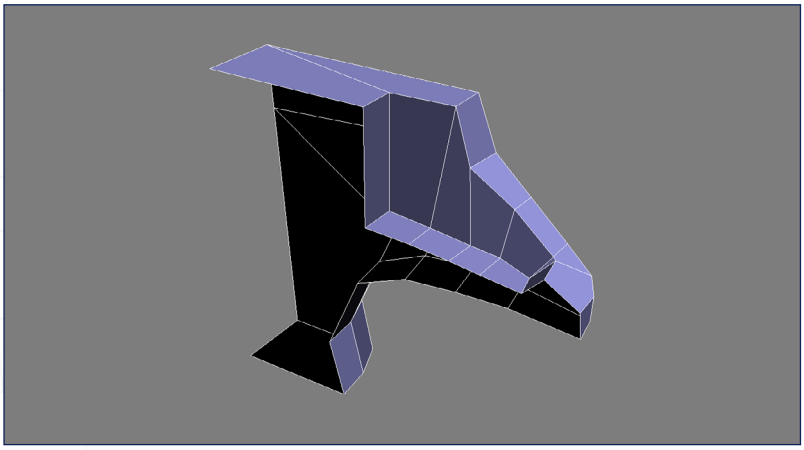


Fig 139

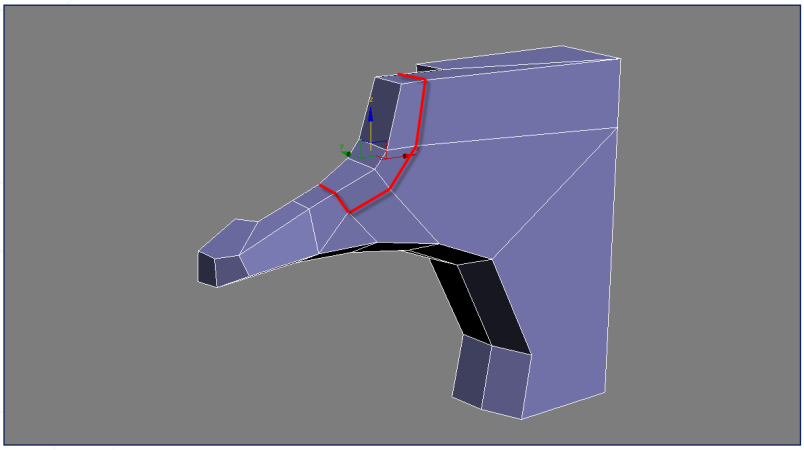
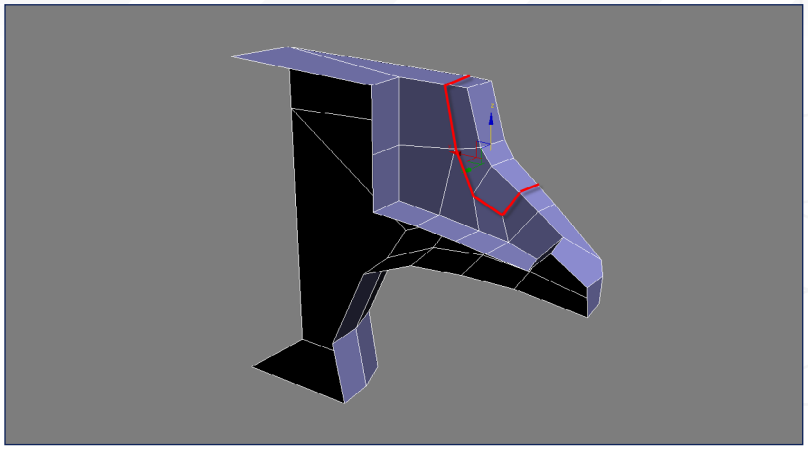


Fig 140

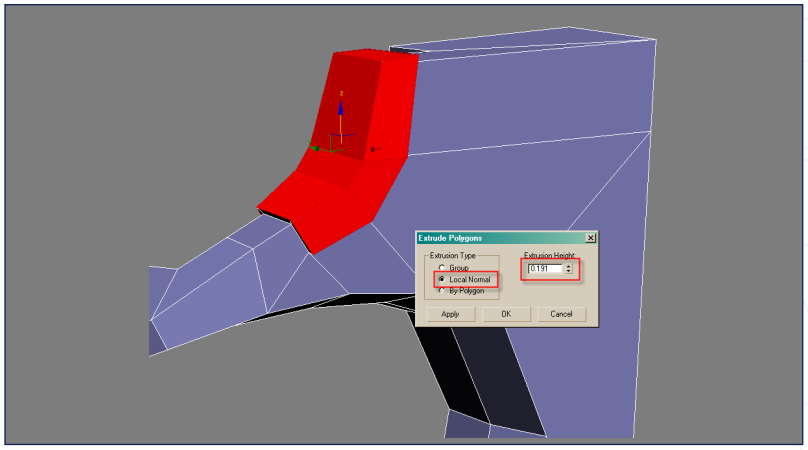
140-141. Prepare another area for extrusion. (**Fig.140 –141**)

Fig 141



142. Extrude the area. (**Fig.142**)

Fig 142



143-144. Do the same on the right to match the reference. (**Fig.143 – 144**)

Fig 143

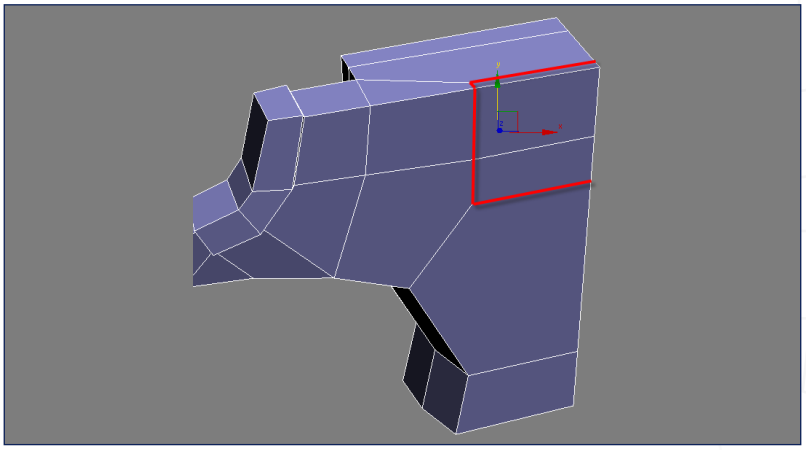
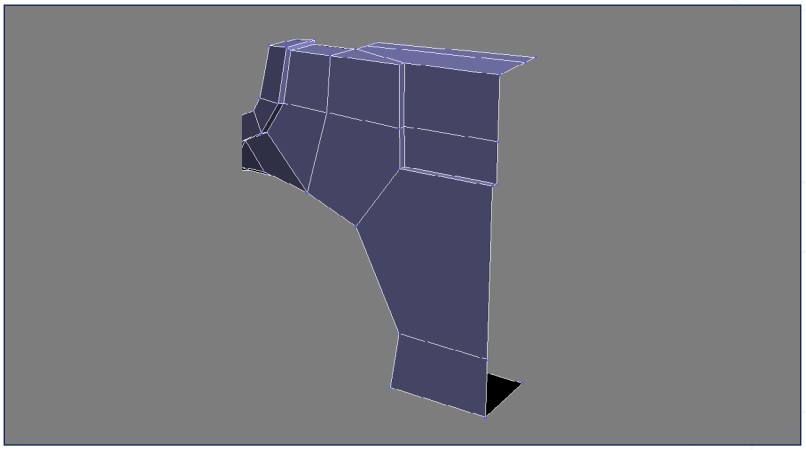


Fig 144



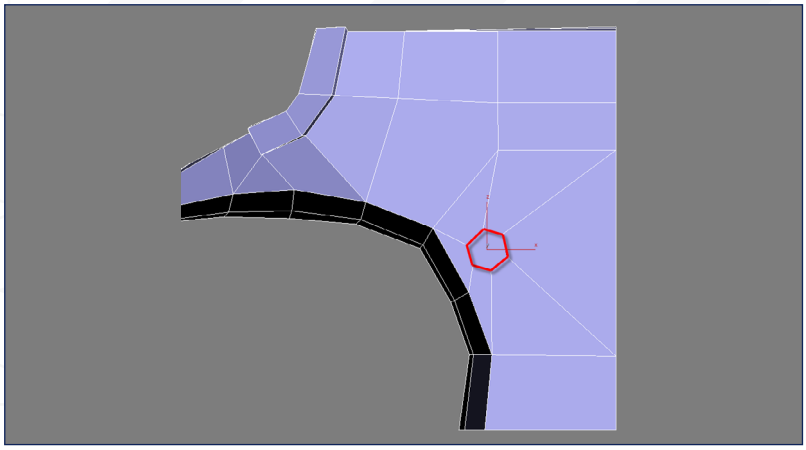


Fig 145

145- 146. As you did for the piece at the front, cut in a hexagon in order to form a button. (See 95-100). (**Fig.145 –146**)

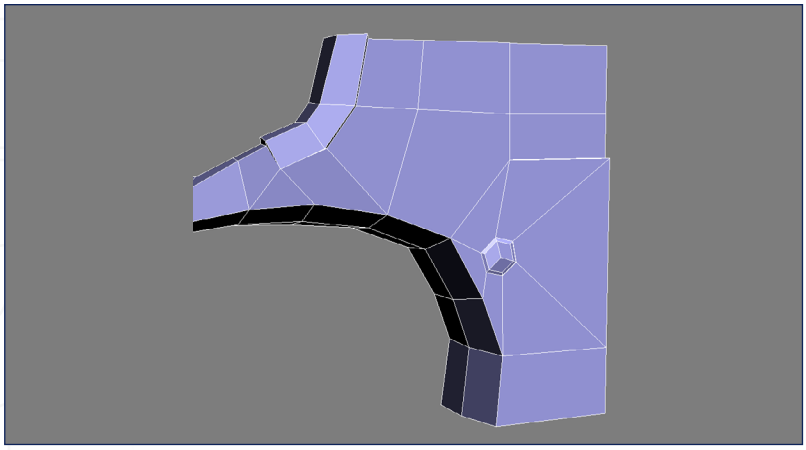


Fig 146

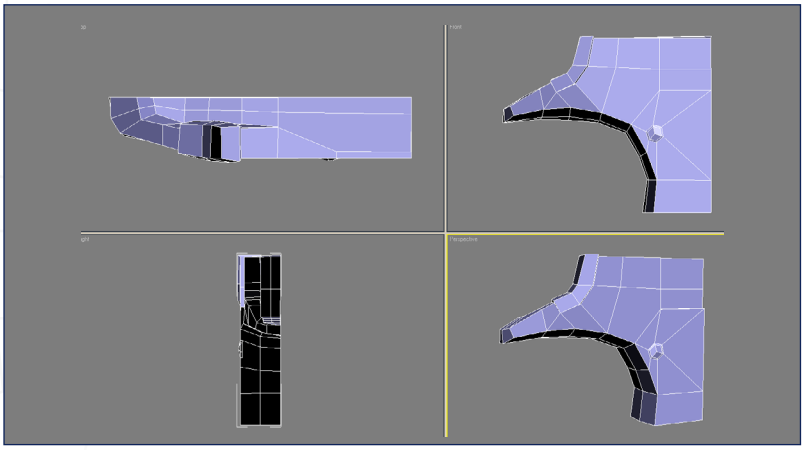


Fig 147

147. Some more angles. (**Fig.147**)

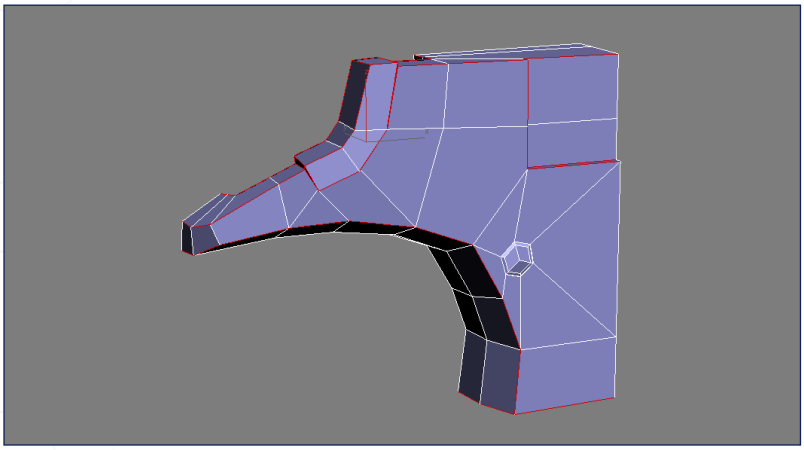


Fig 148

148-149-150. Select the appropriate edges and chamfer them. (**Fig.148 – 150**)

Fig 149

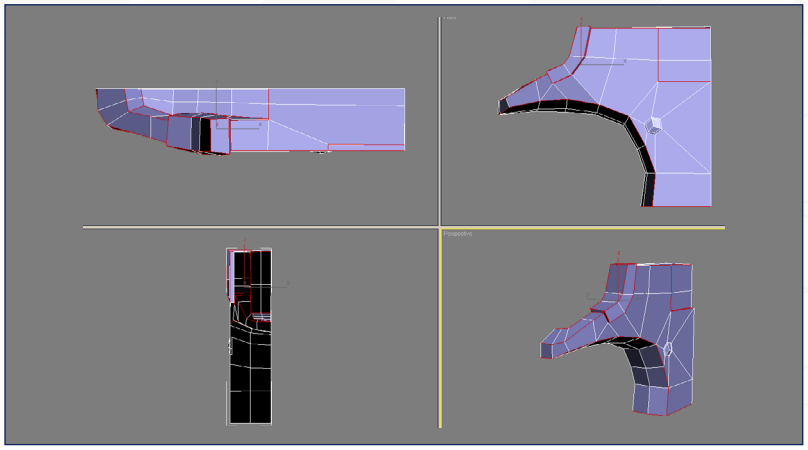
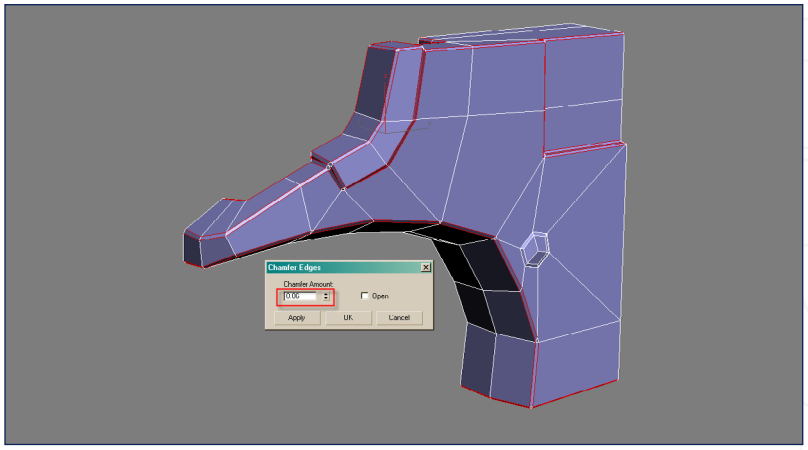


Fig 150



151- 152. A final preview. (**Fig.151 – 152**)

Fig 151

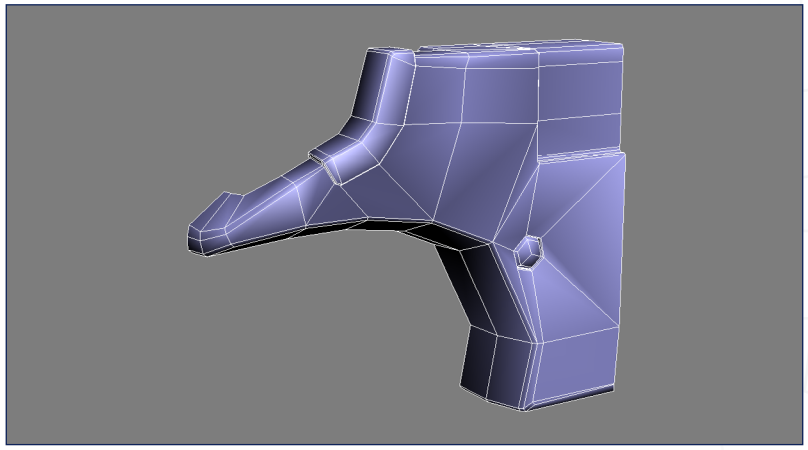
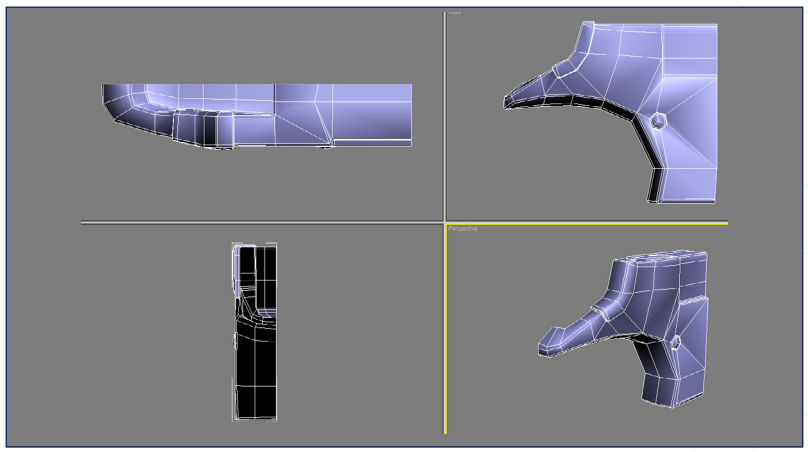


Fig 152



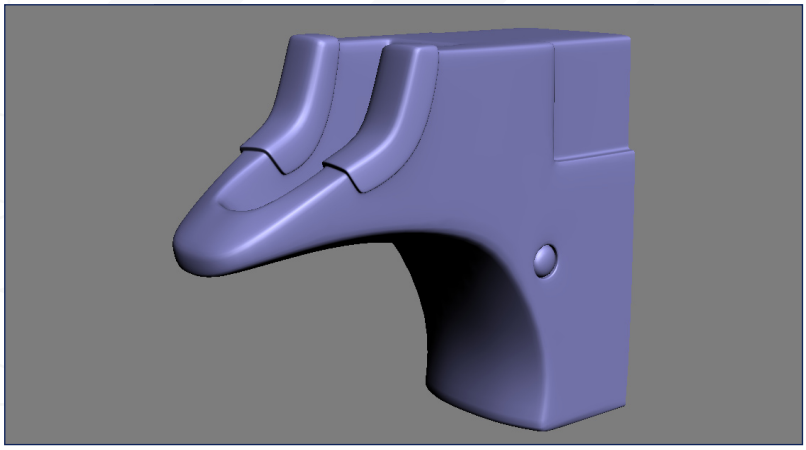


Fig 153

153. Apply the Symmetry and Meshsmooth modifiers. (**Fig.153**)



Fig 154

154. Here is the current stage of the handgun containing all the large pieces. (**Fig.154**)

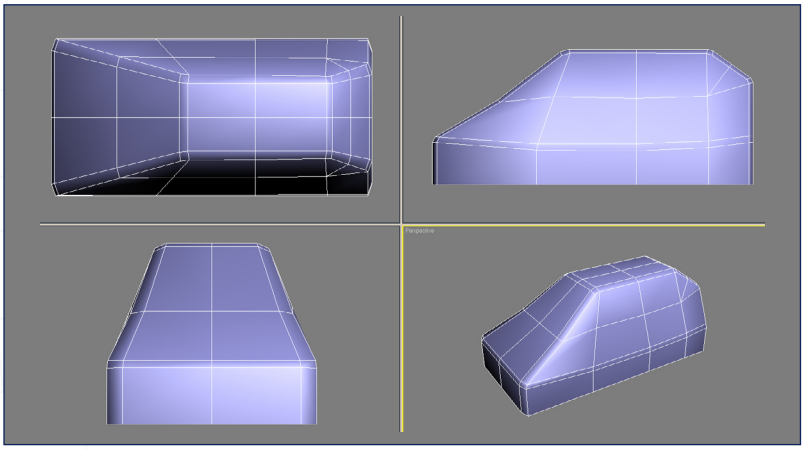


Fig 155

155. Now we are presented with all the small pieces that we are going to add to match the reference.

Here are the sights at the front of the gun. (**Fig.155**)

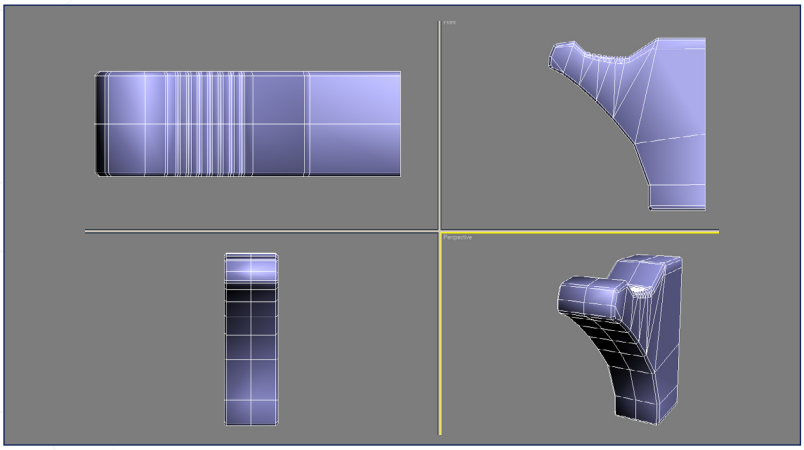
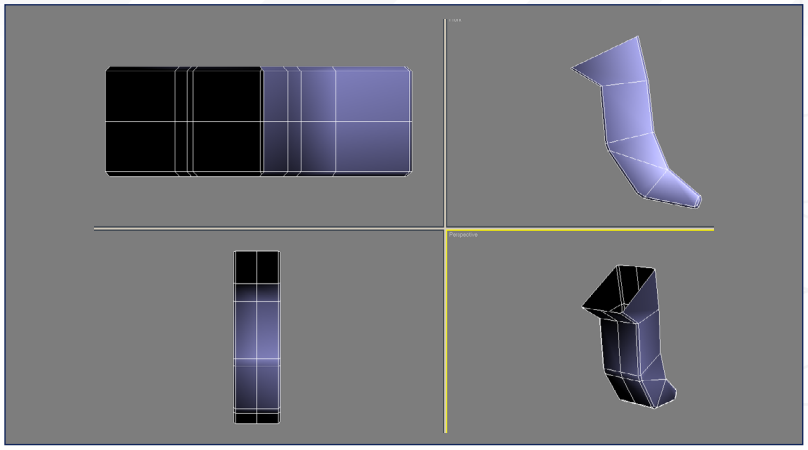


Fig 156

156. The hammer. (**Fig.156**)

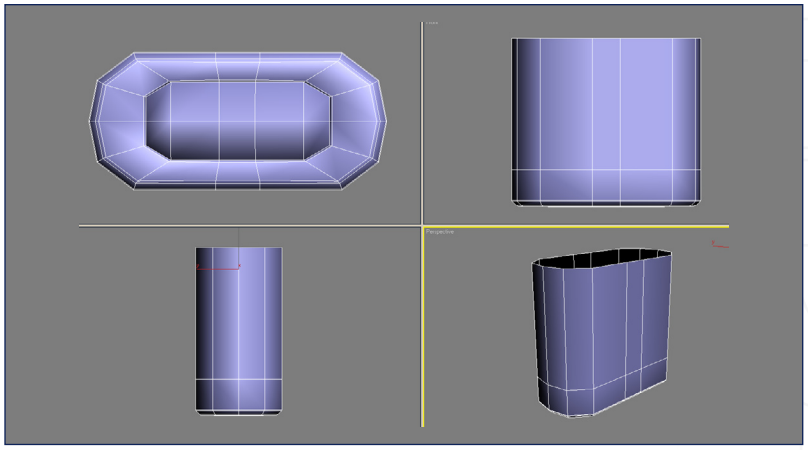
157. The trigger. (**Fig.157**)

Fig 157



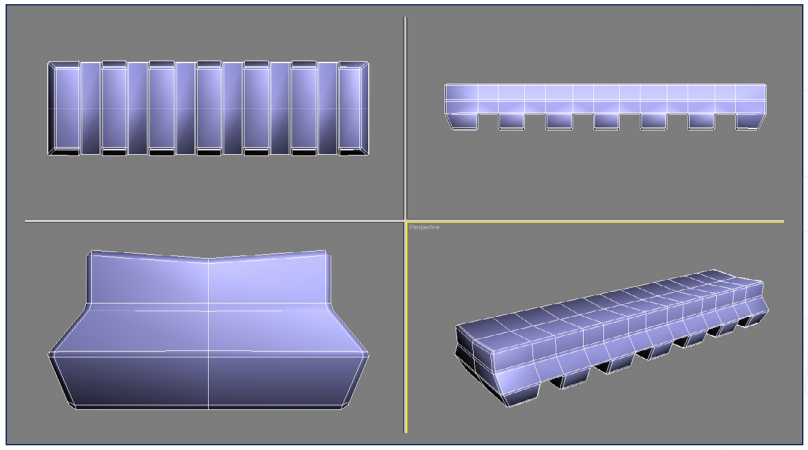
158. The end of the magazine; we don't need to model everything as we don't need this gun to work properly. (**Fig.158**)

Fig 158



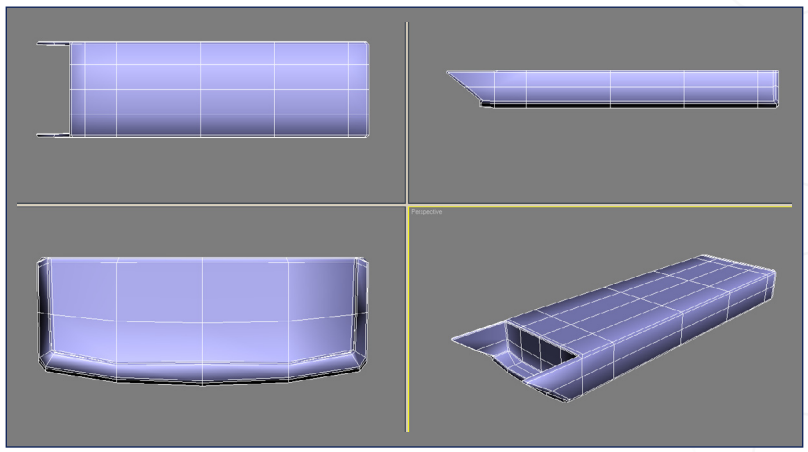
159. Another piece below the barrel of the gun. (**Fig.159**)

Fig 159



160. Another section under the barrel to connect with the one above. (**Fig.160**)

Fig 160



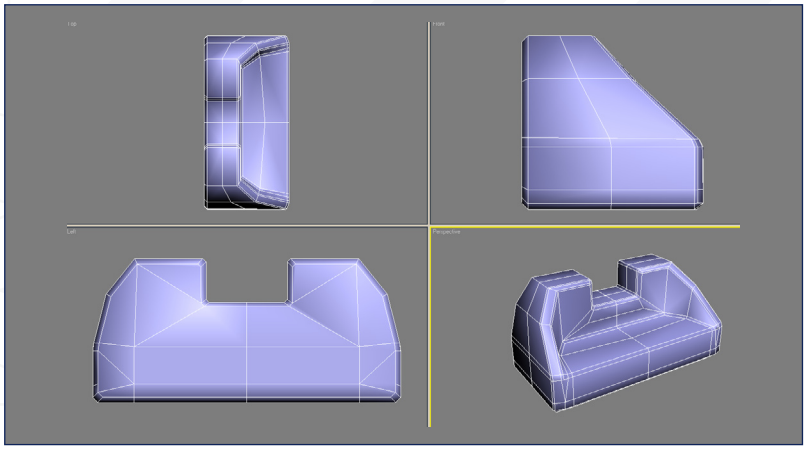


Fig 161

161. The sights at the back of the gun. (**Fig.161**)

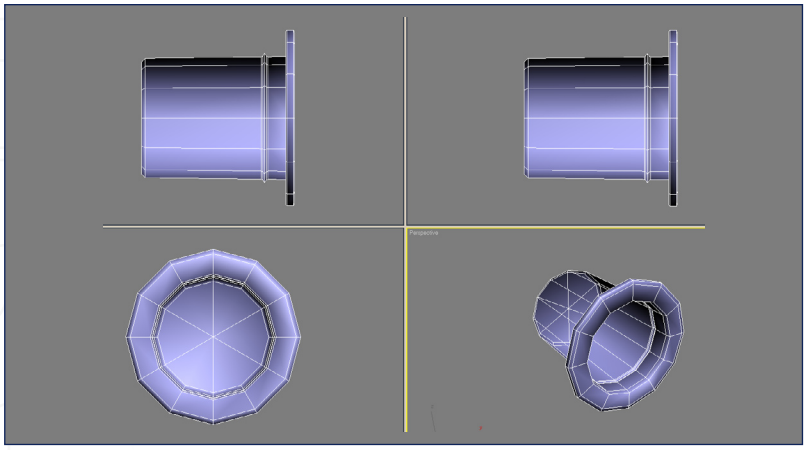


Fig 162

162. The muzzle. (**Fig.162**)

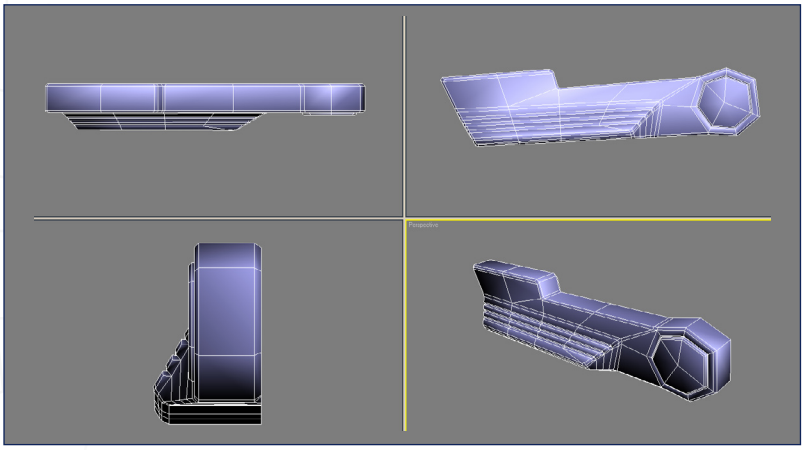


Fig 163

163-164-165- Side details. (**Fig.163 – 165**)

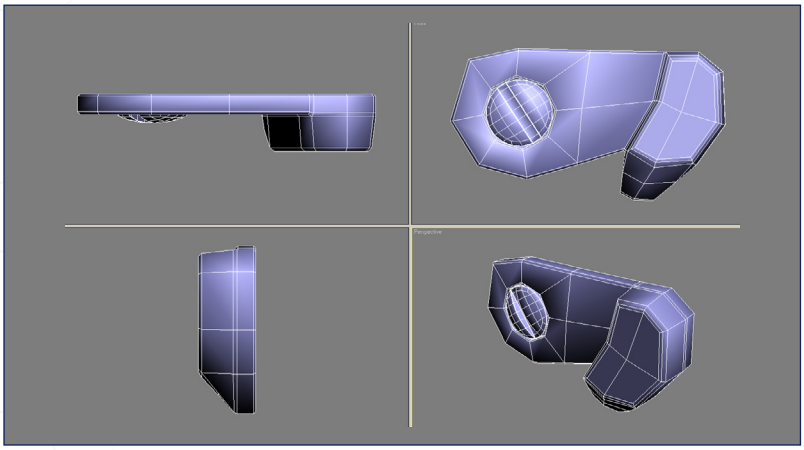
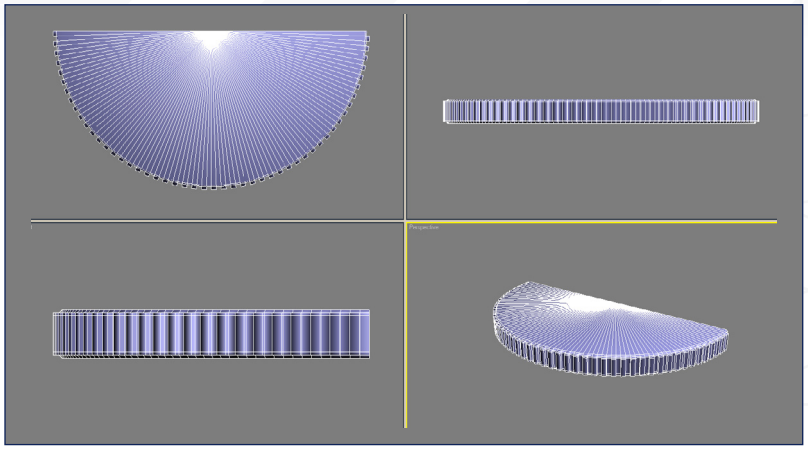


Fig 164

Fig 165



166-167. The final preview of the gun incorporating all the pieces. (**Fig.166 –167**)

Fig 166



Fig 167



168. Here is a real time preview with shadows in 3dsmax 2010. (**Fig.168**)

Fig 168



CEDRIC SEAUT

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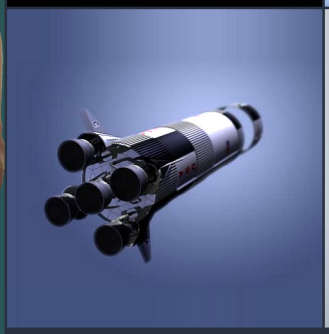
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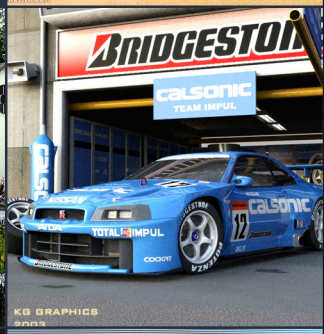



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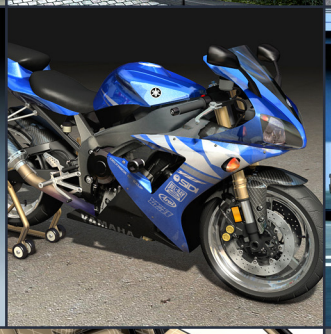
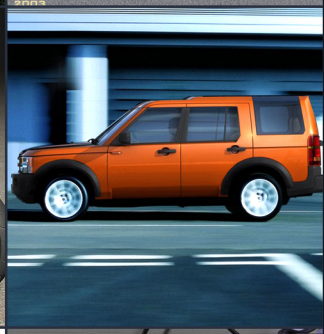
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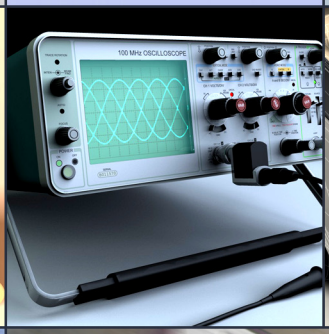




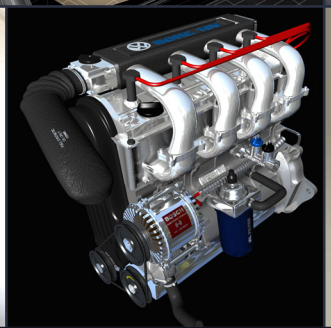











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"VRAY LIGHTS HAVE TWO BASIC SETTINGS, POWER AND SIZE, AS IN REAL WORLD, MEANING A LIGHT SOURCE OF 100W DIFFUSING LIGHT FROM 10CM^2 SURFACE WILL NOT BE AS POWERFUL AS A 1W LIGHT SOURCE EMITTING FROM A 100M^2 SURFACE."

V-RAY FOR 3DS MAX

CHAPTER 4 - VRAY LIGHTS

Welcome to the V-Ray for 3ds Max tutorial series which will cover all the key parameters of V-Ray: global illumination, materials, lighting and more. We will look in-depth at each setting – how it works, what repercussions it has – and we will also take a peek at some of the special features that V-Ray has to offer. If you've ever had any doubts about how to get into V-Ray, or you simply would just like to know a little more about a particular section of the software, this series is for you!

CHAPTER 5: PLUGINS - ISSUE 56 APRIL 2010

V-Ray for 3DS Max Chapter 4 - Vray Lights

Software Used: V-Ray, 3ds Max

This month we are going to go over Vray lights and other lighting solutions available in Vray, along with a quick look on caustics, HDRI and Vray Sun.

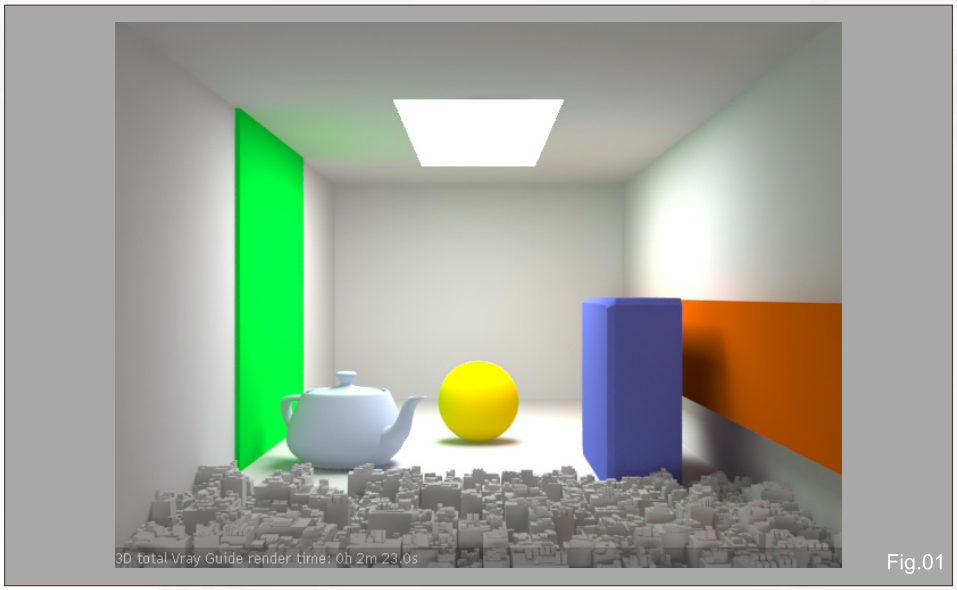


Fig.01

A: Vray Light

The basic lights can be used within Vray should you want a physically accurate light distribution, this particular light gives very good results but is not the fastest to render especially if you use broad area shadows, let's look at how it works. Firstly, Vray lights have two basic settings, power and size, as in real world, meaning a light source of 100W diffusing light from 10cm² surface will not be as powerful as a 1W light source emitting from a 100m² surface (yes meters).

(**Fig.01**) light power 10, light size 25cm-150cm
(**Fig.02**) light power 10, light size 50cm-150cm

Intensity: Straightforward; increase for more light; however the power of this light means you have the opportunity to use different units in accordance with the scene units and the Vray Physical Camera.

You can use the default image unit which is close to max's standard light setting, but you can also set the light power as luminous power, luminous, radiant, or radiance.

Luminous power (lm): using the unit system, the light power will not depend on light size, as a reference a standard 100W bulb emits 1500 lumens.

Luminance: using this unit the light power will depends on its size.

Radiant power (W): a tricky unit as it is not measured as you would think, for a 100W bulb only a couple watts emitted are visible, this unit also does not use light size.

Radiance: same as above but depends on light size.

Multiplier: light intensity

You can either use intensity or color to set the intensity of the light.

Invisible: defines whether or not the light source is directly visible by the camera or thru reflections/refractions, not that you can still see the light source in windows or such should you keep the affect specular box checked.

(**Fig.03**) notice how the ceiling light is not seen in the render

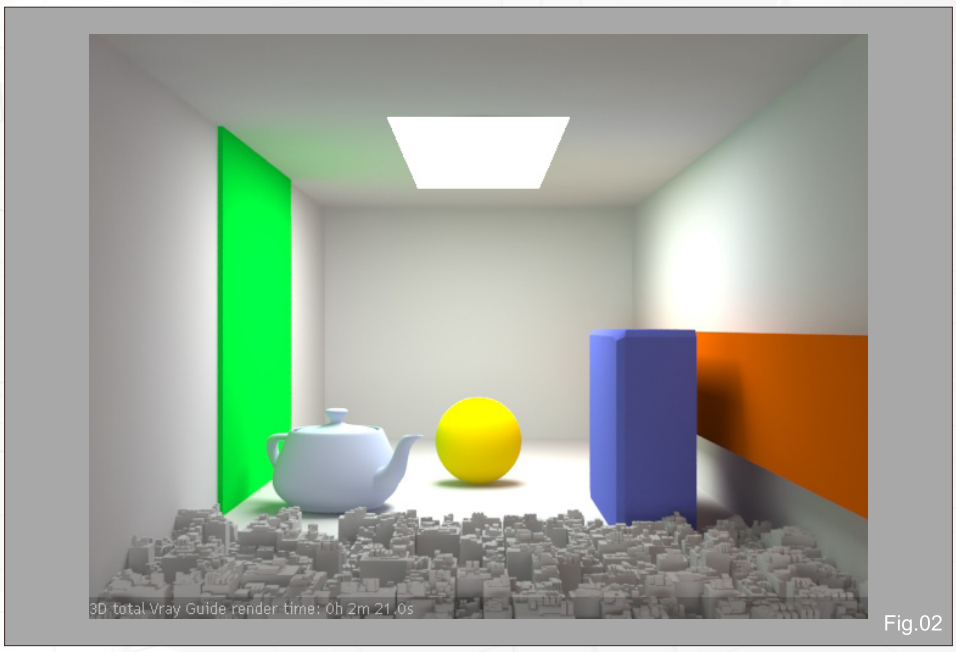
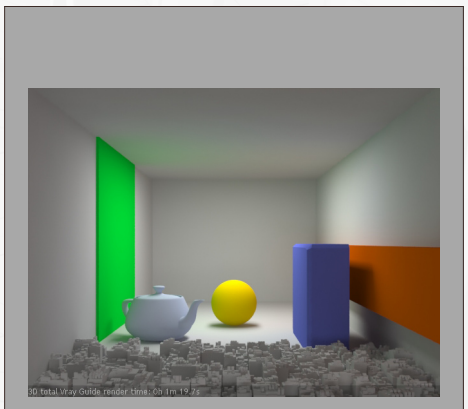


Fig.02


Fig.03

No decay: physically correct lights have an inverse square light decay, so that light intensity fades with distance, you can disable this by un-checking this box.

Skylight portal: when using Image base lighting, this option makes the light source take its intensity from the environment behind it.

Simple portal: speeds up rendering while using skylight portal, by ignoring light casting behind it.

Store with irradiance map: will compute light casting within the GI solution, this will slow down the GI render time, while speeding up final image render time, you can obviously store the solution for quick renders.

Subdiv: used for area shadow calculations, increasing it will produce smoother results, while slowing down the render time.

(**Fig.04**) Fig 72: 8 sampling subdiv
(**Fig.05**) Fig 73: 32 sampling subdiv
(**Fig.06**) Fig 74: 64 sampling subdiv

Shadow Bias: tricky setting, as it will translate the shadows away from objects, this can create strange looking renders, with shadow leaks.

Cutoff: sets a maximum value for light, can be useful in scenes with many lights, keep at 0.0 to have accurate lights; you can always save your image in 16 or 32 bits to have some margin in compositing.


Fig.04


Fig.05


Fig.06

Texture: you can also use Vray lights as a texture projector, only with rectangle, dome, or mesh lights, leave adaptiveness at 1.0,

Note: it is recommended to use GI with texture mapped lights or mesh lights.

(**Fig.07**) Fig 75: single sided
(**Fig.08**) Fig 76: double sided

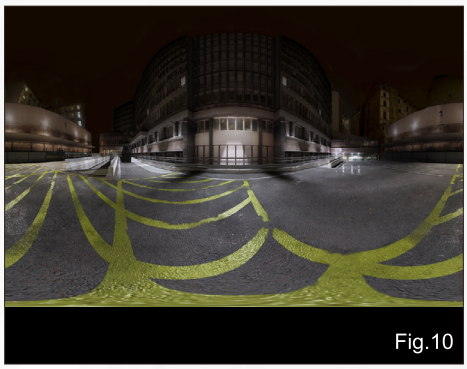


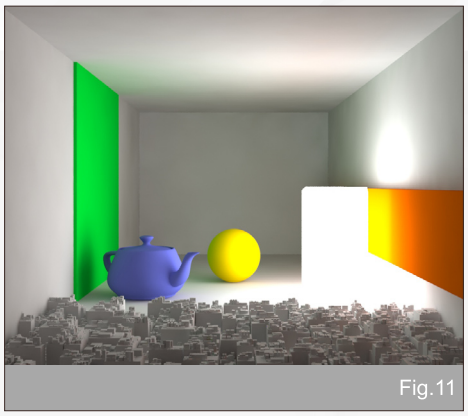
Fig.07



Fig.08


Fig.09


Fig.10


Fig.11

B: Image Based Lighting

With Dome lights you can light an entire scene using IBL, works best with HDR images, you can control the orientation of the image both in the light settings and in the material settings.

(**Fig.09**) Fig 78: teapot light with only a dome light, notice it also affect reflections.
(**Fig.10**) Fig 79: spherical map used

C: Vray Light Mtl

Vray light material is a powerful tool, in its most basic form it works as a planar Vray light, you can add a texture map to it, make it double sided etc.

It also works with complex mesh and particle instances, remember that the larger the surface emitting will be the more hemispherical subdivisions you will have to compute in order to have a smooth and correct render, resulting most of the time, in very long render times.
(**Fig.11**) Fig 80

D: Vray Sun

A particular plugin of Vray can used to simulate sunlight and skylight, depending on the light height and orientation it will automatically change the sky's and lights color, useful for quick setups.

Size: When increasing it will create more diffuse shadows, as decreasing it will make sharper ones, you control the shadow quality with shadow subdivisions, simply increase it for smoother shadows should you get too much noise, however this affects render time.

Turbidity: simulates the amount of dust/pollution present in the air thus creating yellow overall sky and light color; decrease this value for a clear sky, increase it should you need a post apocalyptic mood.

Intensity: normally the height of the sun controls the intensity of the light, however you can bypass this with the intensity multiplier; note: you can also switch to Vray physical camera, increase the ISO setting, lower shutter speed etc… more on this next month.

Ozone: this will change the overall color of the light, increase for bluish mood.

(**Fig.12**) basic sun with Vray physical cam
(**Fig.13**) Fig 82: sun height 500
(**Fig.14**) Fig 83: sun height -500


Fig.12


Fig.13


Fig.14

(**Fig.15**) Fig 84: sun height 5000
(**Fig.16**) Fig 85: turbidity 15
(**Fig.17**) Fig 86: turbidity 5
(**Fig.18**) Fig 87: size multiplier 50
(**Fig.19**) Fig 88: size multiplier 5
(**Fig.20**) Fig 89: height -150, intensity 1
(**Fig.21**) Fig 90: height -150, intensity 3
(**Fig.22**) Fig 91: height -150, intensity 0.1


Fig.15


Fig.16


Fig.17


Fig.19


Fig.18


Fig.20


Fig.21


Fig.22


Fig.23


Fig.24


Fig.25


Fig.26

E: Extra

You can also use Vray shadow solution with standard max light, simply select Vray shadow in the shadow scroll, this is the fastest way to have correct area shadows with Vray. It renders faster than Vray lights, and can easily look the same; however you cannot use Vrays intensity units, and in some cases it might take longer to render.

(**Fig.23**) Fig 92: Vray light 32 shadow subdiv, this took 22 seconds render.

(**Fig.24**) Fig 93: standard max with area shadows light, 28 second render, but with artifacts.

(**Fig.25**) Fig 94: standard max light with Vray shadow with area shadows activated, 13 second render and 8 subdivisions.

(**Fig.26**) Fig 95: standard max light with Vray shadow, with area shadows activated, 13 second render and 16 subdivisions.

This concludes the Lights chapter, I trust you have read the previous ones about GI and Vray's advanced settings to take full advantage of Vray's render engine, this series is to be concluded next months, with a look on Vray's plugins.

Eric Ennis

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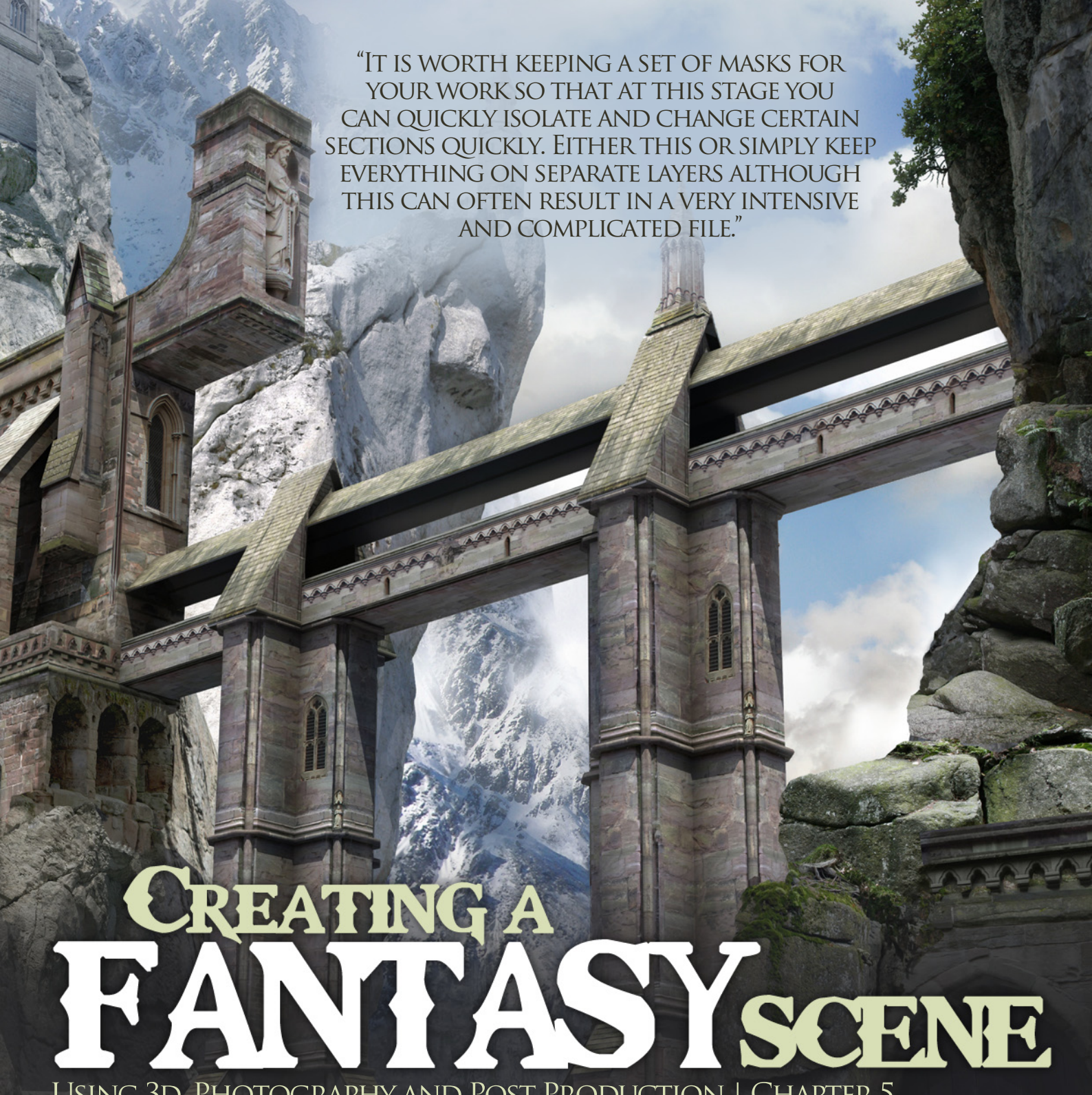
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"It is worth keeping a set of masks for your work so that at this stage you can quickly isolate and change certain sections quickly. Either this or simply keep everything on separate layers although this can often result in a very intensive and complicated file."

Creating a Fantasy Scene

Using 3D, Photography and Post Production | Chapter 5

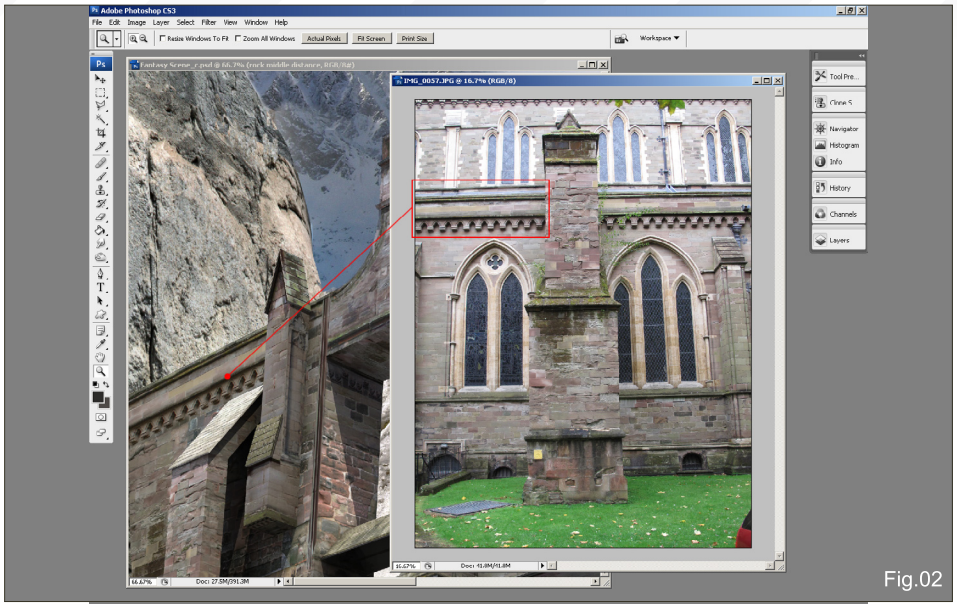
Using 3ds Max and Photoshop, we'll be teaching you how to create a fantasy scene inspired by real-world architecture, and how to correctly and effectively use reference photos of your chosen source of inspiration to get stunning effects quickly and easily! This month we're tackling the photography and concept stage in preparation for the 3ds Max work coming in the next issue. Read on to join Richard Tilbury for the first chapter of the 5-part series.

This Issue :

The final chapter will focus on bringing everything together and refining the image, as well as using it as a guide to revisiting the original location in order to take photos of specific features that closely match the scene perspective. These will then be composited into the scene, adding extra detail and interest.

Chapter 1 | November 2009 Issue 51
Chapter 2 | December 2009 Issue 52
Chapter 3 | January 2010 Issue 53
Chapter 4 | February 2010 Issue 54
Chapter 5 | March 2010 Issue 55


Fig.01


Fig.02

CREATING A FANTASY SCENE USING 3D, PHOTOGRAPHY AND POST PRODUCTION: CHAPTER 5

Software Used: 3ds Max and Photoshop

INTRODUCTION

During the course of this tutorial we will build a fictional scene inspired by an existing location, in this case a cathedral. The building itself will dictate the style of architecture used throughout and will essentially be reorganized into a different structure altogether.

All of the architectural forms and details will be extracted from the cathedral itself and after being deconstructed shall be reassembled to assume a new design, rather like building with Lego if you like.

The building will then be placed into an imaginary environment and will start its life cycle as a 3d model built inside 3dStudio Max. Our 3d package will be used to create the lighting and perspective as well as setting the camera position / viewing angle.

Photographs taken of the site will then be used to create rudimentary textures used to map the building. 3d Totals free library of reference photographs will be used to construct the scenery in a way akin to matte painting as well as add finer details to the building model.

The final stage of the tutorial process will involve revisiting the location in order to photograph certain parts of the cathedral from specific angles to match the perspective in our scene. These photographs will then be edited and used to add extra detail and further refine our image.

ADDING SOME DETAIL

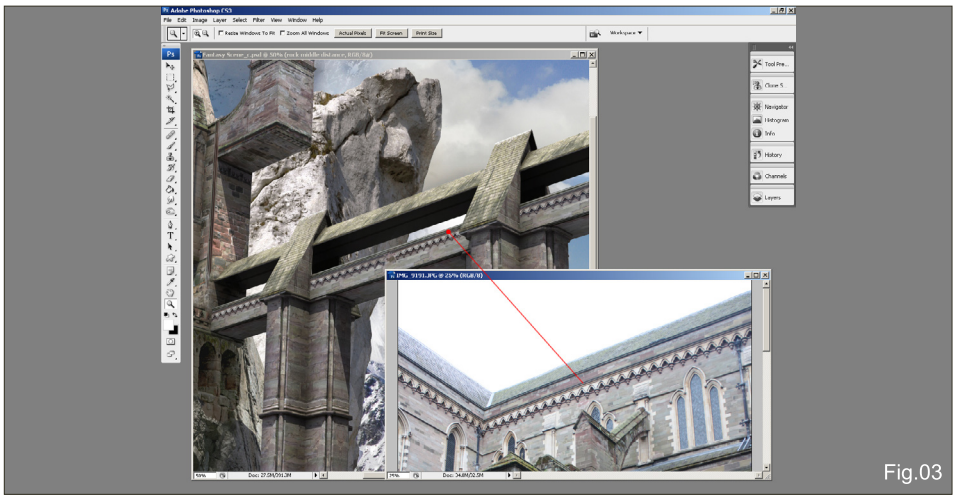
Fig.01 shows the stage we had reached at the end of the last chapter. We now have all of the main components in place with the foreground and background composited in around the 3d elements. The next stage involves adding some details to the scene and in particular the buildings which will help make them more interesting and give the viewer more to look at.

Once this is done we will add in some more architectural aspects that will further enhance the building and be photographed on location to closely match the perspective in the scene. Once these aspects have been added we will conclude with some Image Adjustments in Photoshop to bring everything together.

To start with I chose a section from one of the photos to enhance the left part of the building (**Fig.02**).

I copied and pasted the section highlighted in red and then went to; Edit – Transform – Skew and aligned it with the building.

I followed the same procedure for a section along the top edge of the bridge (**Fig.03**).


Fig.03

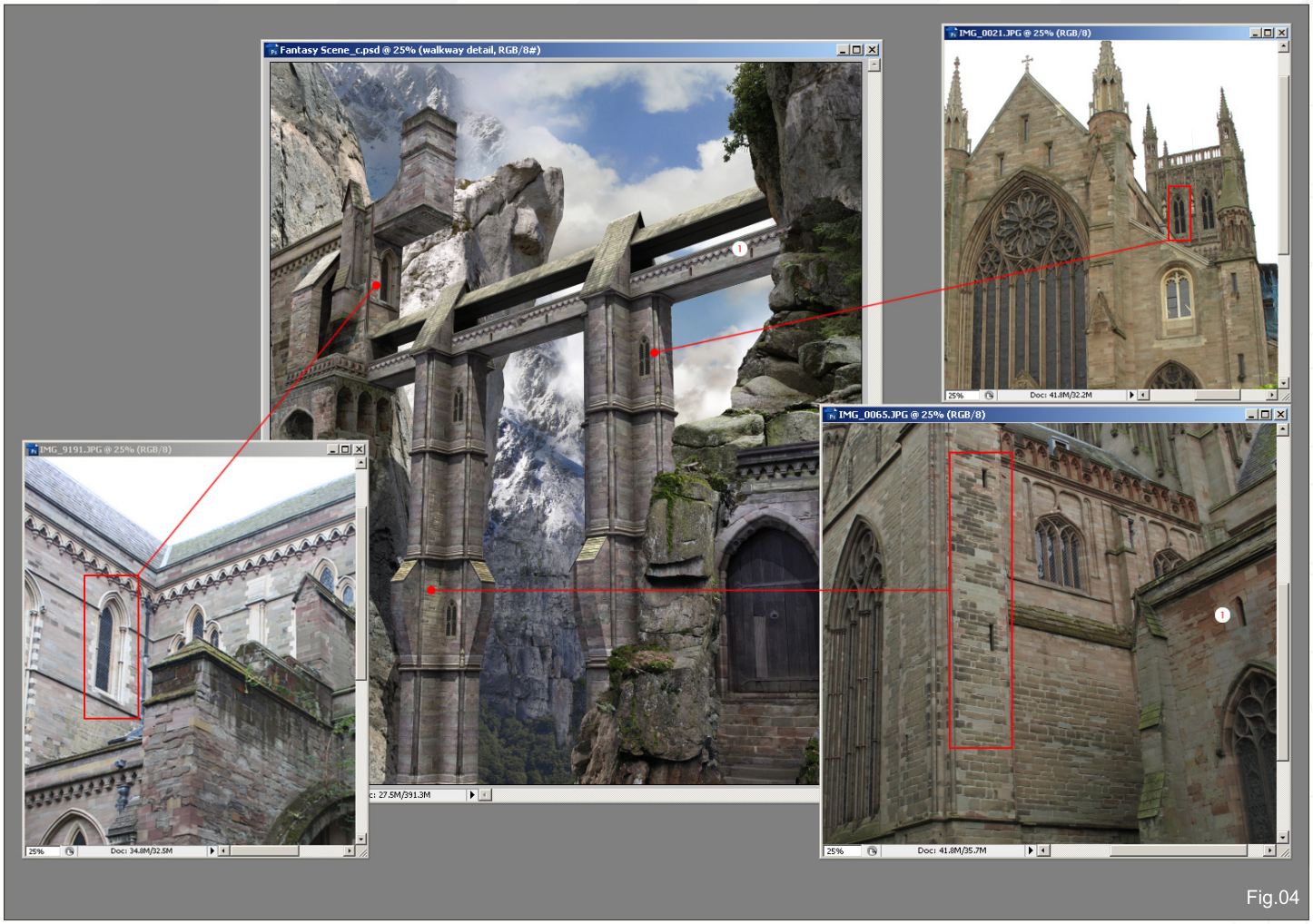


Fig.04

I scanned through the library of photos to find some other suitable details and **Fig.04** shows some of these once they have been applied. The approach is the same each time which first of all requires everything being scaled and then skewed / transformed to match the perspective. Once this is done you can begin making the appropriate Image Adjustments; i.e. Color Balance, Brightness/Contrast etc.

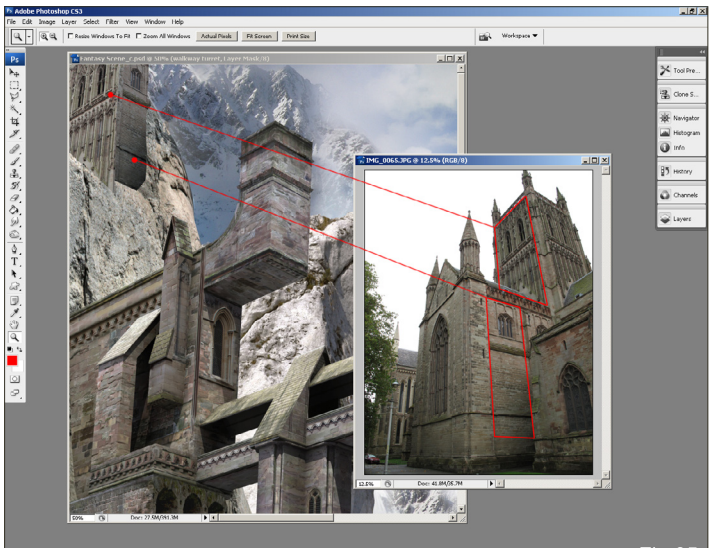


Fig.05

Notice that I have chosen photos whose details are similar to the perspective in the scene.

The columns, bridge and building now look a bit more interesting with the windows adding some sense of scale as well as helping break up the uniformity. I added the smaller brickwork on the left column to disguise the symmetry and perhaps suggest some repair work. You may also notice that the decoration along the bridge has some damage in the middle section. All of these details and imperfections are small but collectively they help make the overall scene a little more realistic.

To suggest that the bridge is a link to some sort of mountain outpost, I opted to add another building in the upper right. **Fig.05** shows how from a single photo the new section of architecture is transformed to match the perspective. This is one of the photos I took after re-visiting the site for specific perspective shots but proved to be more useful than I had anticipated! I made a selection area around the parts highlighted in red and then pasted these into my scene. Using a combination of Rotate, Distort and Skew (Edit – Transform) these were then assembled. As this only occupied a small region of the image I didn't worry too much about the seam matching perfectly. The main thing to focus on is the tonal

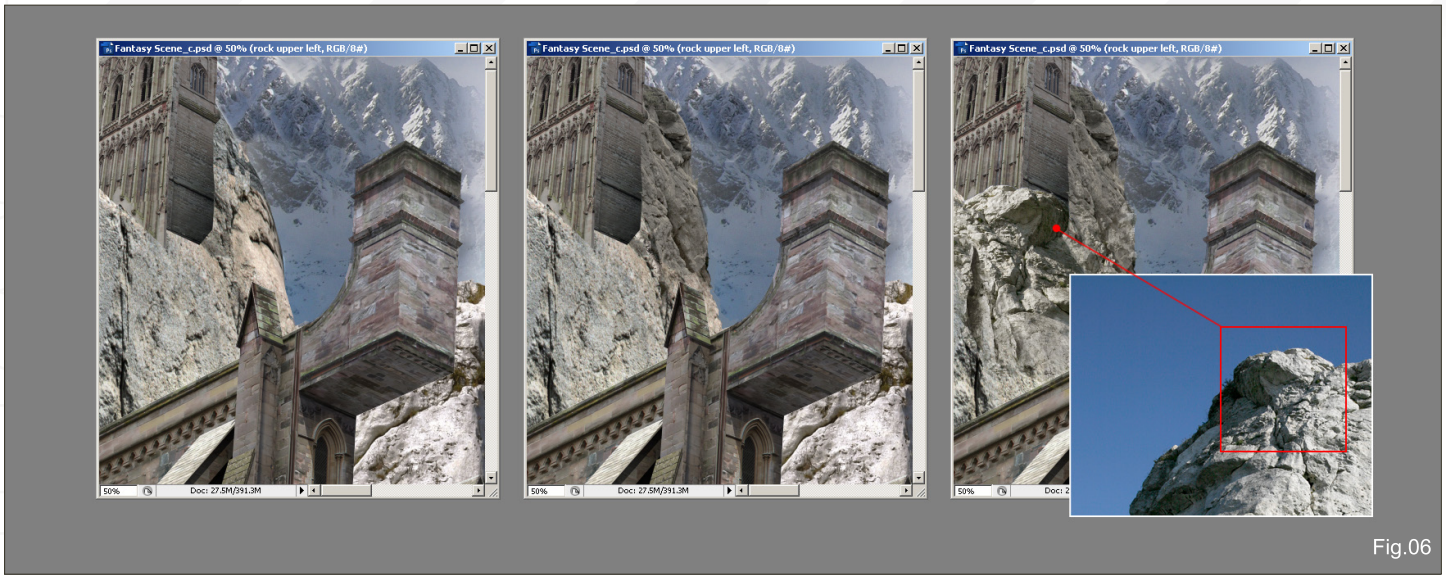


Fig.06

range and color and so using a combination of Brightness/Contrast, Curves and Color Balance prove to be very useful.

At this moment the building is not integrated with the rock face and so will need some attention. The first step involves adding a shadow to the right but in this case I added some more rock from a different photo which was darkened (middle image in **Fig.06**). To help support the architecture I then pasted in some rock from a different reference which was taken from the following image:

http://freetextures.3dtotal.com/preview.php?imi=8151&s=c:Rock&p=0&cid=17

I chose this picture because as you can see in the right image in **Fig.06**, it had a natural ledge with shadows I could exploit. It was flipped in order to get the light on the opposite side but fitted in nicely.

Photos To Match The Scene

You may recall that a few of the details such as the arched window below the main tower and the carved decoration along the top of the bridge almost matched the scene perspective. These photos were taken especially for the render once I knew where the camera would be placed. Even if you are not able to take specific photos it is always a good idea to try and find images that match as closely as possible. This is not vital but it does reduce the amount of skewing and distortion needed.

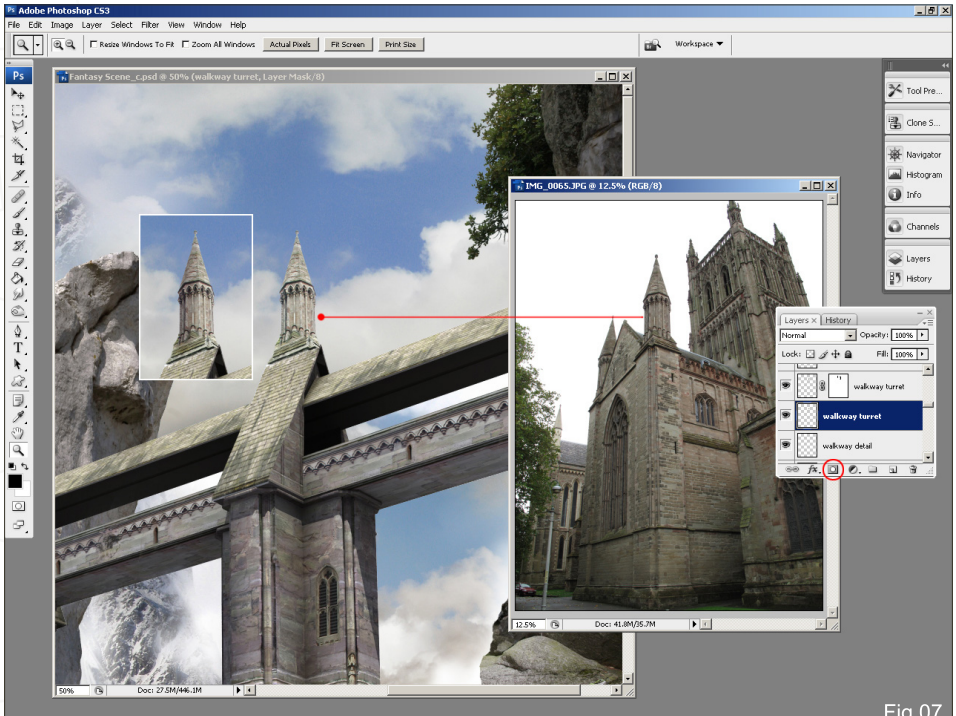
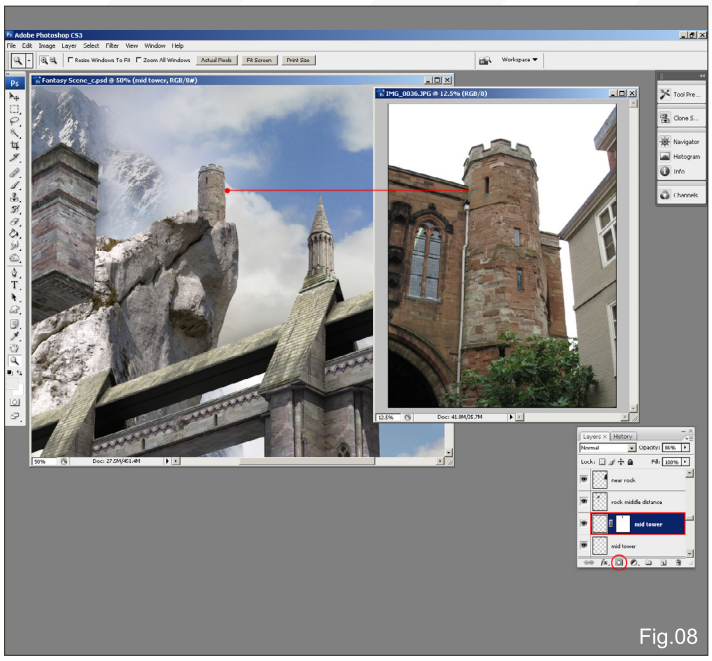


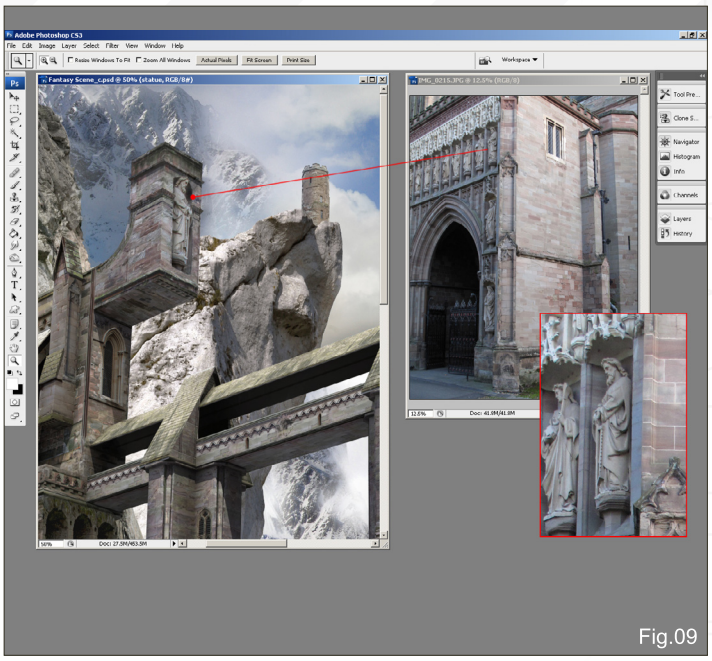
Fig.07

After looking at the scene I decided it would be good to add something above the right column as well as on the rock in the middle distance as this looked like a natural lookout post. I also thought that the “L” shaped tower needed to be more interesting. I therefore picked up the camera and went back to the cathedral looking for some suitable subject matter.

Fig.07 shows the photo I took after looking around the cathedral for a suitable section of architecture. I photographed this with the scene in mind as I wanted to use the spire. You can see that it was easy to mask and once pasted and scaled it was almost perfect. I used Curves to brighten it up and make sure it was similar in color to the roof.

This spire didn’t have any strong shadows on it which is ideal for this type of exercise but it could benefit from some subtle shading on the left. To do this I first duplicated the layer and


Fig.08


Fig.09

then darkened it slightly. Then I clicked on the Add Layer Mask icon at the base of the Layers palette (small white circle in a grey rectangle). Using a pure black I then painted along the left edge inside the mask to reveal a shadow (inset in **Fig.07**).

This is a good technique as it is fully reversible. For the large outcrop I photographed a turret next to the cathedral making sure to roughly mimic the correct perspective. This was then copied into the scene and a darker duplicate layer made to represent the shadows.

Fig.08 shows the result which has been color corrected and the corresponding Layer Mask used to reveal the shadow along the left hand side.

One could argue that given the position of the sun that there would be very little shadow on the visible side of each of these components, but a subtle hint can sometimes help create a bit of volume.

It was now time to deal with the “L”shaped tower which needed a focal point. I looked around the cathedral and then my eye caught the statures outside the entrance which looked perfect. Remembering the camera angle in the scene, I took a photo which I then used to add another area of interest (**Fig.09**).

Final Adjustments

At this stage everything of significance was in place and we have an even spread of detail from the background through to the foreground. Numerous refinements have been made to the 3d components to add interest as well as the inclusion of some specific details such as the statue.

It is worth keeping a set of masks for your work so that at this stage you can quickly isolate and change certain sections quickly. Either this or simply keep everything on separate layers although this can often result in a very intensive and complicated file.

Before completing the image with some additional painting and extra components I made some changes at this point using only what was apparent so far. **Fig.10** shows the “before and after” versions with the former on the left.

The key changes are as follows:

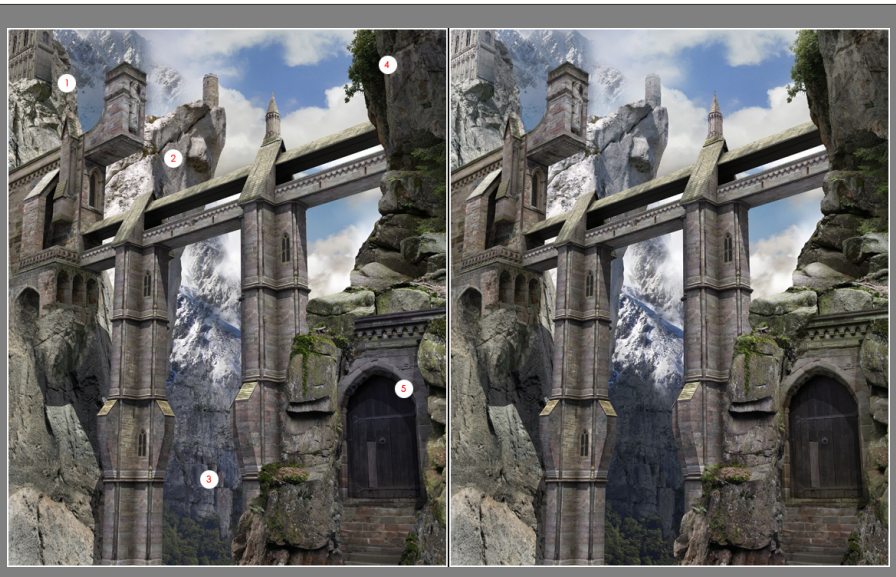


Fig.10

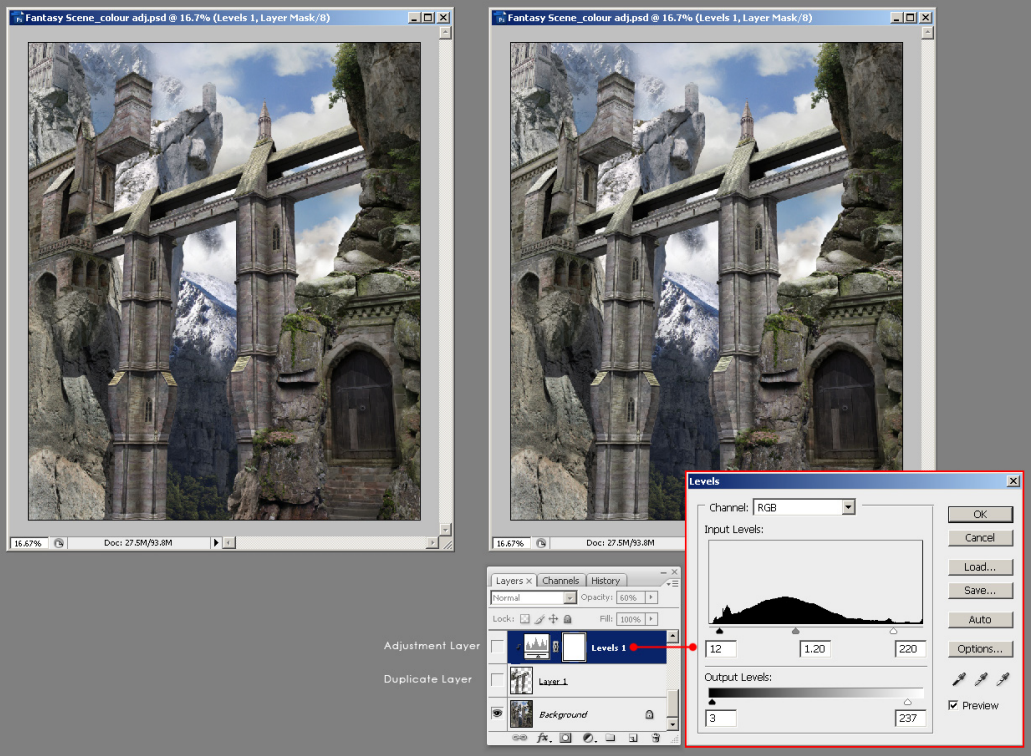


Fig.11

1. Upper left building and rock face were made lighter and the contrast reduced using Image – Adjustments – Curves. I then tinted it blue (Image – Adjustments – Color Balance).

2. I repeated this process for the outcrop of rock so that these sections receded further.

3. I darkened the lower section of the mountain to add depth and suggest it was shadowed by the foreground mountain (Image – Adjustments – Brightness/Contrast).

4. By duplicating this upper section and then applying a Layer Mask, I lightened the near face to add volume and made the outer leaves more translucent to reflect the bright sky behind them (Image – Adjustments – Curves).

5. To better integrate the door with the mountainside I tinted it towards green to match the surrounding rocks (Image – Adjustments – Color Balance).

After this initial phase of color and tonal adjustments I flattened the PSD.

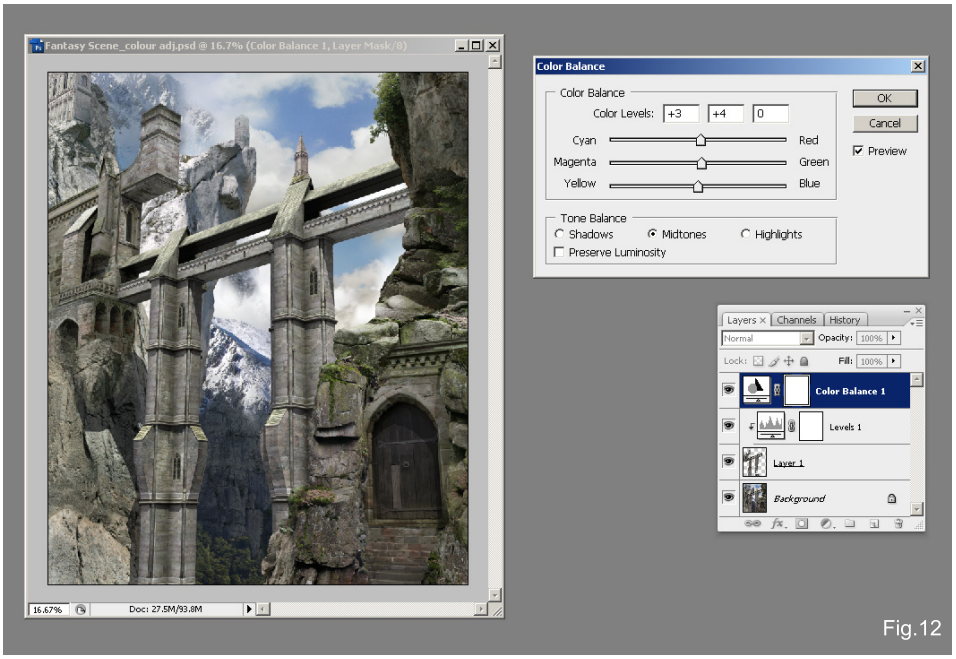


Fig.12

I decided that the 3d elements were a little too dark and didn't really look like they were built from the mountains surrounding them. I used a mask that corresponded to just this section so that I could isolate and duplicate just the 3d parts. I then applied an Adjustment Layer (Layer – New Adjustment Layer – Levels) and moved the sliders to lighten the stone work as shown in **Fig.11**.

I duplicated the buildings purely because I didn't want the Adjustment Layer to affect the entire image.

I then added a Color Balance Adjustment Layer and added a very small amount of green and red as shown in **Fig.12** in order that the buildings had a very subtle hint of green to balance them with the rock.

I added a new layer which I called “refinements” and on this I started to paint out some of the problem areas. Because the 3d scene was very basic it meant that sections like the intersecting roof canopies did not cast a shadow. On the left in **Fig.13** are two details of the scene before I painted in the corrections which are highlighted by the red dots. You can see that generally the edges are a bit sharp and have an outline which needs to be addressed. These are only small touches but they help improve the scene greatly.



Fig.13

The next thing I added were some plants to soften the edge of the foreground rocks. I did this because it helped reduce the “cutout” effect and give it a more natural feel. I used one of the free images at the following location as it already has a mask which meant I could select just the shrubs and copy them in swiftly.

http://freetextures.3dtotal.com/preview.php?imi=8288&s=c:Rock&p=5&cid=17

Once in position, I color corrected them making them a little more green and lush. **Fig.14** shows the extra plants that were added (left image) and two sections from the reference photo that was used.

To blend them in and generate more growth I used the Clone Stamp Tool and Eraser to manually place them around the rocks in a natural way.

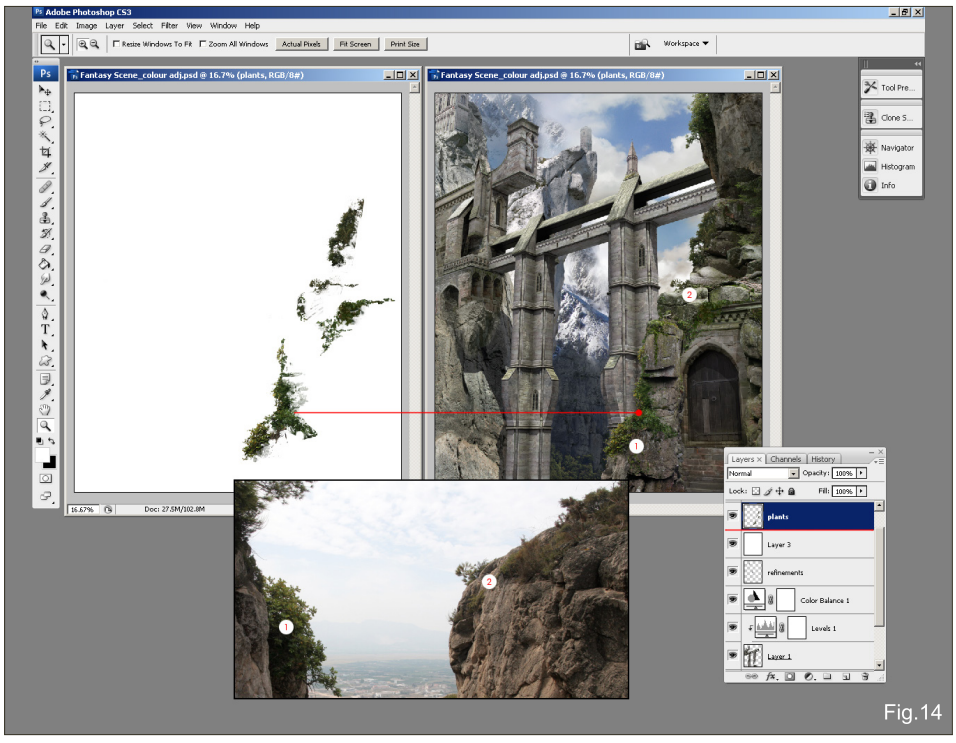


Fig.14

At this point the image is almost complete but after taking a break from looking at the scene I decided that the foreground was a little too warm and did not seem fully part of the environment. I therefore duplicated this section and then went to Image – Adjustments – Color Balance and tinted it towards a cooler value by increasing the blue.

One final touch was the addition of some mist which was done on a new layer. I used a Soft Round Airbrush set to a low opacity and with a pure white painted in a few strokes which were then blurred (Filter – Blur – Gaussian Blur).

Here is the final image (**Fig.15**).

RICHARD TILBURY

For more from this artist visit

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Fig.15



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"Firstly, I needed the correct scaling. Secondly I wanted a powerful texture for the cushions, carpet, chairs, curtains, and the face of the clock. Thirdly I wanted exact and real looking lighting"

Making Of

The Drawing Room

Featured in last months gallery "The Drawing Room" is now brought to life by Mojtaba Shabanzadeh as he explains the creative process of making such a complex scene.

THE DRAWING ROOM

Software Used: 3ds Max

THE SET ACCESSORIES

(**Fig.01**) Let`s review the scene: The room consists of the following pieces of furniture, a small table in the middle and a smaller table in the corner of the room. It also has a bin and a side table with a mirror that has a candlestick on it. There is a wall clock, curtains, and the sofa's and arm chairs.


Fig.01

I believe we should live and breathe 3D to give our work soul… we make the work and the work makes us. We should feel close to the project during designing. I believe we should try to imagine the project is in front of our eyes. If you can imagine the building in your mind, this is the thing that will make the scene more distinct. For example the shape of the furniture or pillows and the light that is behind curtains which gives the scene a larger sense of depth. Then I try to focus more on the subject of furniture and think about how I will make them.

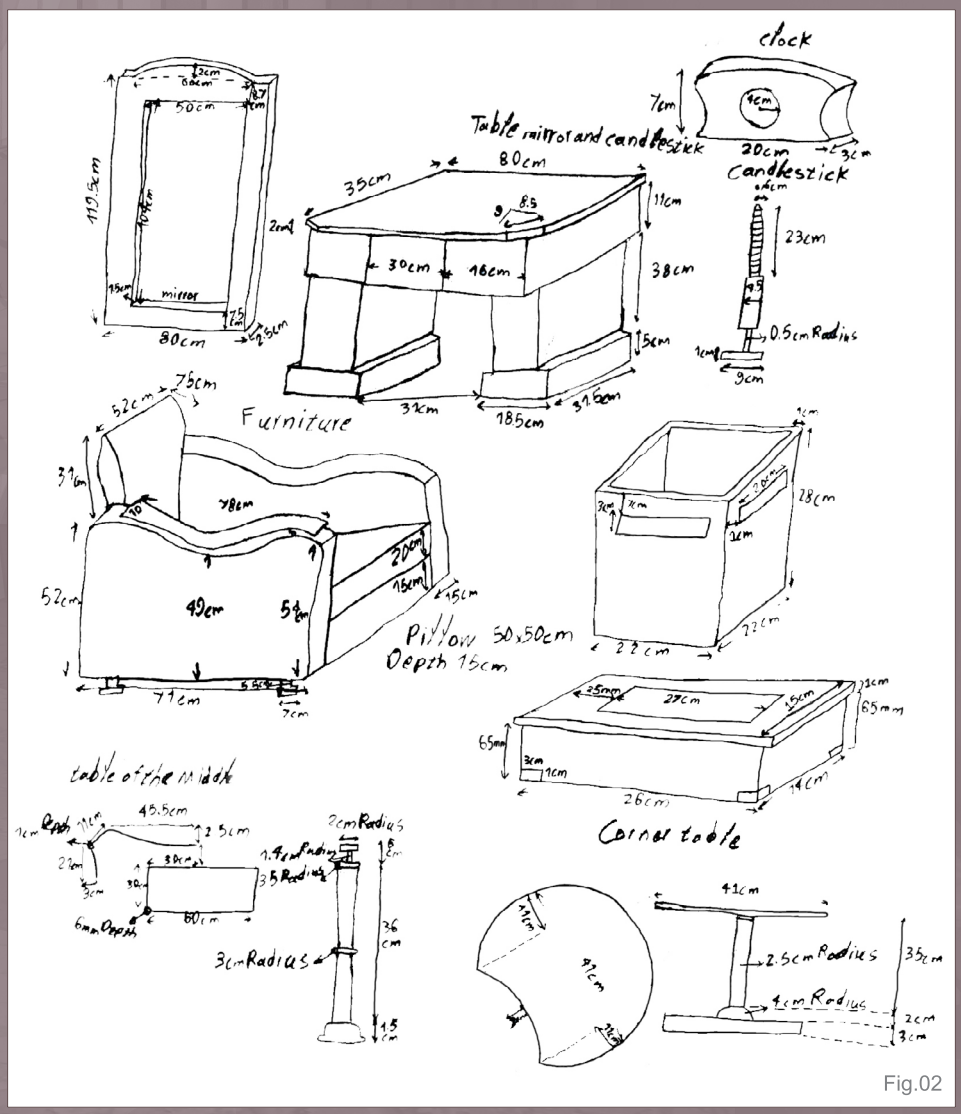


Fig.02

To make the scene as real as possible, I had to consider the following. Firstly, I needed the correct scaling. Secondly I wanted a powerful texture for the cushions, carpet, chairs, curtains, and the face of the clock. Thirdly I wanted exact and real looking lighting, the house I chose for the making of the drawing room has six windows so I wanted to use all the light created by these in different parts of the image. Another thing I wanted to do was create a natural, clear and bright render of the set.

MEASURMENT

(**Fig.02**) Firstly, I measured the furniture with a sewing tape measure because of its flexibility; and then recorded the sizes. I feel that by doing this I can be more accurate. I even measured the distance between the light switch and the floor. If you look at the final picture you can see the benefit of having exact measurements. This work took me almost one hour. This

was particularly hard for me as I have torn my anterior cruciate ligament! I paid special attention during this process, ensuring I had the correct details for the parts that I knew would be hard to build.

If you have the details of the scale to hand, then it makes it easier to alter different parts of the image. Of course when adjusting scale and size it is important to remember to apply the same changes to everything in the image.

Customized Set

(**Fig.03**) I am used to building objects in white. Sometimes I encounter problems if everything is white, so I enable see - through in the Display Properties or change the color of parts for a short time. I also used orthographic view or wing Edged faces for editing objects. The Resolution

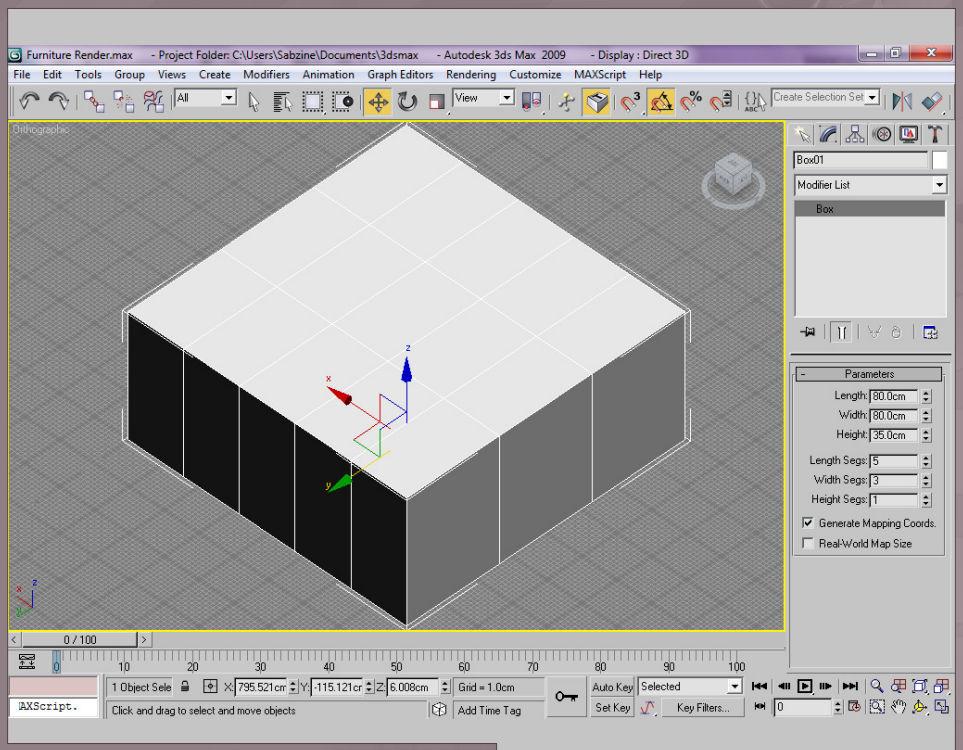


Fig.03



Fig.04

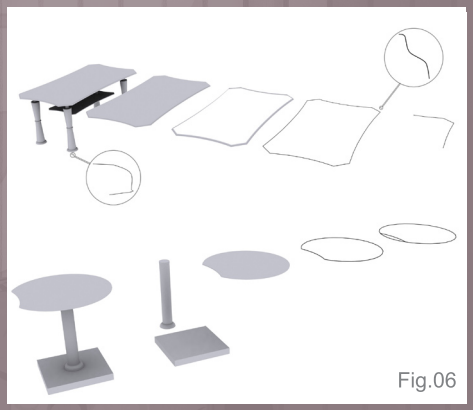
of my computer can`t be more than 1024*768 which is problematic because I maximize the viewport sometimes. I prefer to use the mouse roller to orbit, zoom and pan because I believe that by doing so makes it easier to change the viewpoint. I set the Orbit to Sub- Object because it is more precise. I choose to zoom about the mouse point (orthographic) using the viewport options in Customize>Preferences menu. Then, zoom in and zoom out on a selected point via mouse roll. The angle snap toggle is on most of the time.

Modeling

(**Fig.04**) To make the suite, I created a Box with specific Dimensions. I then added some segments to resemble the furniture in my original photograph. I then used the Chamfer and the Meshsmooth function to refine the edges of the furniture. The furniture feet and wooden parts were added too, and I used a new box for the arms. I then copied the chair and adjusted it to make the sofas; all I had to do was increase the length. I then added the seat of the sofa to show the softness of the cloth.

(**Fig.05**) I initially used three Polygons for the furniture pillows and then added extra ones to build in some of the fabric tension. I mirrored the four sides and attached them together, dragging each corner to the center of the pillow. I tried to make each of the seven pillows slightly different. Overall, 8996 polygons and 9089 vertices were used for the final pillow.

It's time to make the small table and the table supporting the mirror and candlestick. I made some elaborate grooves for the large table which took several days. I then started to make the curtain, waste paper bin, handkerchief, window and all the other peripheral elements.


Fig.06

(**Fig.06**) In order to make the small table I used one Line and two Arcs. I then mirrored these four times to make the glass. I designed the edge by starting with a Line and the applying a Loft, which effectively made the edges, areas and volumes. Using the Cap Holes function, I filled the empty parts inside the glass. I used the above mentioned procedure to make the lower glass. I made the feet of the table using a Cone and Cylinder. Once again a Line and Lathe was used to make the lower part of the feet.

Now, it was time to make the side table in the corner. I used Spline Shapes for making the glass top which incorporated a Circle and an Arc. I used several methods to add the volume, but I think the best one is the Loft. I used a Box for the foot of the table and a Line and Lathe modifier for the stand.

(**Fig.07**) After making the furniture and the small tables I had to make the other objects, namely the table supporting the mirror and candlestick,


Fig.05


Fig.07

along with the lamp and lights. In order to make slots into the body of the table, after adding segments in the appropriate place slots, we can use Extrude and Chamfer to make the edges. Eventually the surface can be refined using the Meshsmooth function. The wastepaper bin and tissue box are made from chamfered boxes. In order to make the details we can use a Line and Lathe modifier. If you look closely at the clock, you will notice it is made of four cylinders. Using these in conjunction with arcs will yield a good result.

Materials and Textures

(**Fig.08**) First of all I took a picture of the seat cloth with a 12.1 MP Camera and imported the pictures into Photoshop. I made a texture (4001x5375) and using Unwrap UVW applied the material to the three furniture pieces and seven pillows which took about one day. By using Unwrap UVW on all of the items of furniture, I save UV space. I kept the Texture within the wireframe boundary and deleted any additional texture outside of this. I also did this for the other objects.

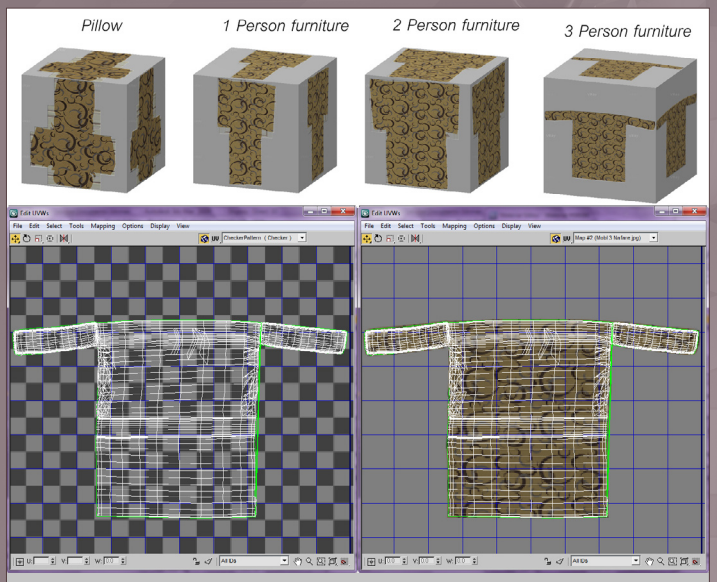


Fig.08

(**Fig.09**) I feel that when adding materials to a body of furniture, it is better to use procedural maps inside Max, so used a composite combining different colors. I combined two noise maps, mixing different colors to achieve a color similar to the furniture in the original photo. I used this image for the Bump map to convey the leather texture on the furniture.

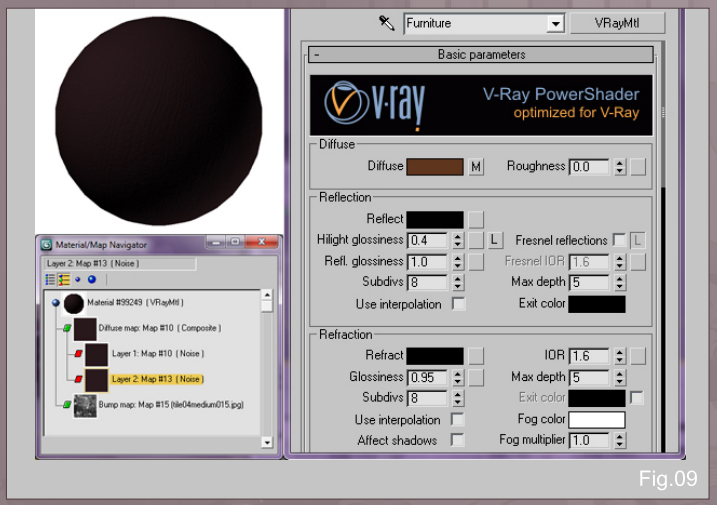


Fig.09

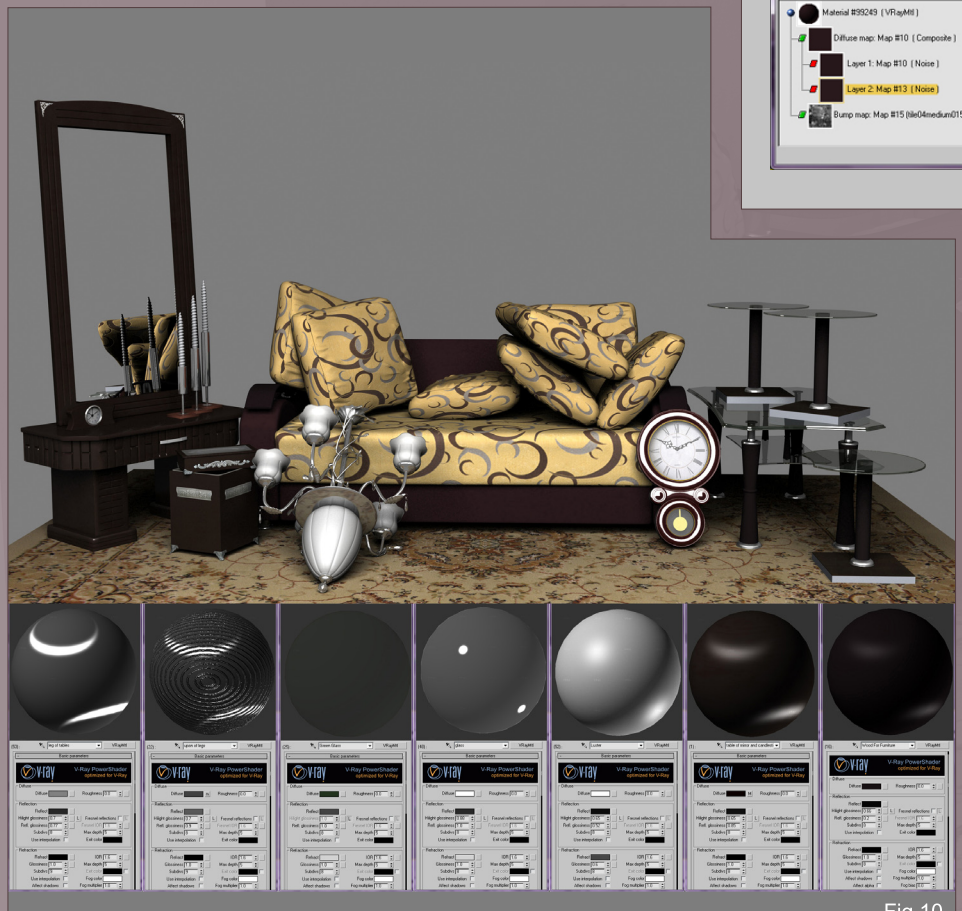


Fig.10

(**Fig.10**) I believe we must consider all objects with regards to reflections. Some things that do not produce light in the real world, do reflect light. However there are objects that have such little reflection that we can ignore them. I tried to consider this effect carefully except for the objects that show a negligible amount of reflection. If we look at the reflections on the surface of some objects that are not completely flat, we see that the reflection is not evenly shiny. For such reflections we can use Refl. glossiness. I tried to set the material parameters to make the objects look natural. I placed a wood texture in the Diffuse slot to make its color natural and changed the color to match. I then altered the texture effect from 30% to 70%. All in all I used 81 materials and 35 textures in this scene.

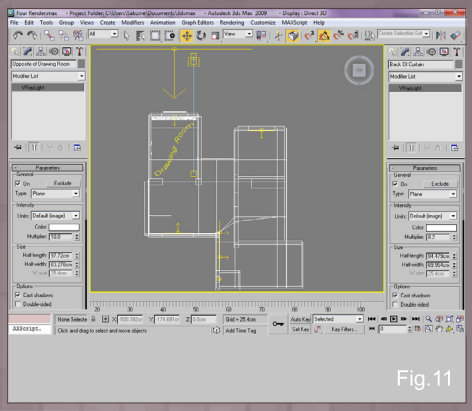
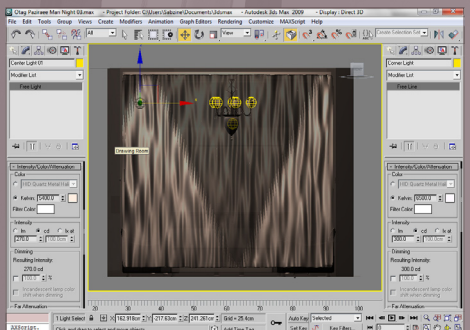

Fig.11


Fig.12

LIGHTING

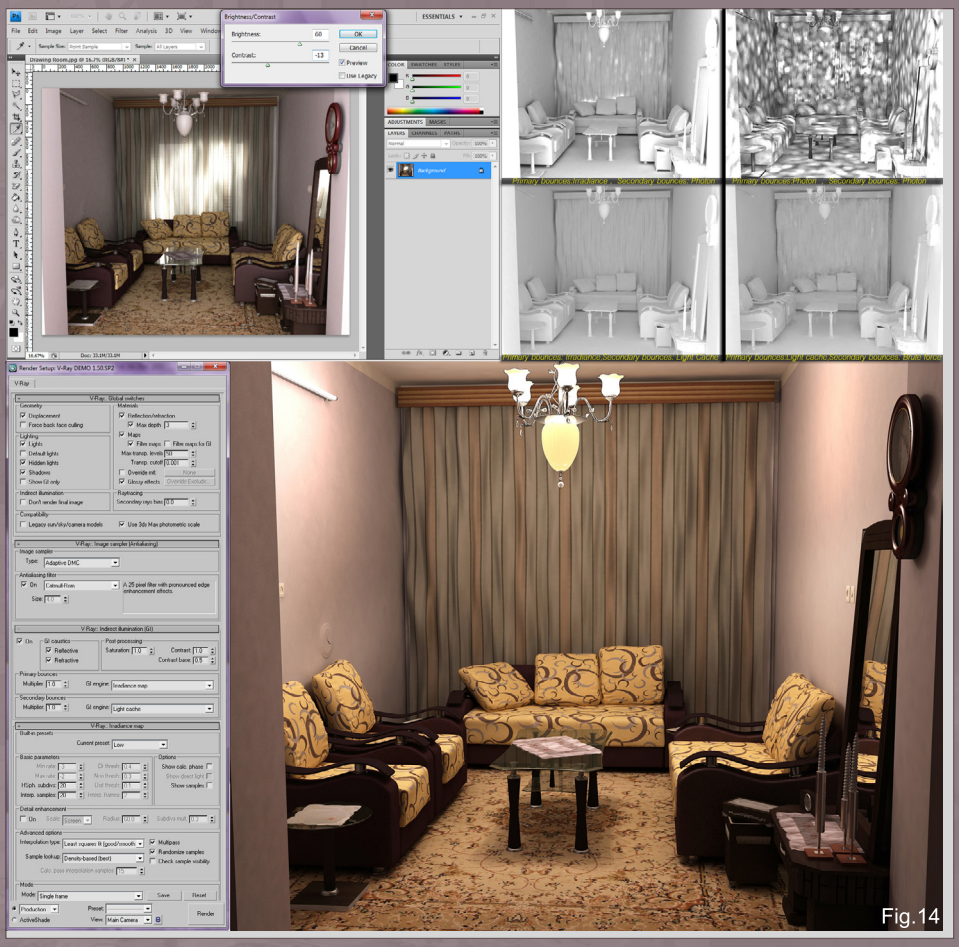
(**Fig.11**) In order to light the room I used seven different colors as well as Vraylight and Direct target. I tried to place the lights in their correct positions to make the scene look more natural. The key lights are placed behind the back of the curtains and in front of the drawing room, respectively. Then, I set the light intensity and changed the color to orange.

(**Fig.12**) After two days of trying to arrive at a favorable set up in my scene I rendered out the curtain without any glass and observed how the light affected the room. It certainly looked better and the scene was lighter but I wanted to lower the light and therefore added the glass. The result wasn`t bad but was not ideal. I wanted to show the rectangular frame behind the light and tried to render the under curtain and obtain a better result. I put both curtains in the scene and the result proved successful.


Fig.13

LIGHTING FOR NIGHT

(**Fig.13**) I omitted all of the Vraylight and Direct targets and used seven photometric lights, six for the reflective light and one for the Fluorescent light. The average intensity was set to 275 cd. An orange was used for the bounce light and light blue for the Fluorescent. Also in the shape/area shadows tab and the group called Emit Light From, I set the six lights on Point and the other light on Line.


Fig.14

RENDERING

(**Fig.14**) First I tried to use different Refractives under the Indirect Illumination tab, in the Render Setup dialogue. I tested the primary and secondary reflections. I rendered the scene in four different ways using a white material. In the first one, Primary bounces and Secondary bounces: Photon - I didn't get the desired result. In the second one: Secondary bounces: Brute Force, Primary bounce: Light Cache, the result was better but not ideal. In the third

one Secondary bounces: Irradiance, Primary bounces: Photon, things were good but not ideal. In the fourth one with Secondary bounces: Irradiance and Primary: light cache, I got the ideal result. If I increased the light intensity for the key lights, they had an effect on the walls, so I rendered the scene with an average light. Then I used Photoshop to set the brightness and contrast. I used the same render settings to render the drawing room at night.

I hope this proves interesting!

Mojtaba Shabanzadeh

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This month we feature:

"The Pursuit"

by Thibaut Milville



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The following shots of the “The Pursuit” book pages are featured here in full-resolution and can be read by zooming in...



The Pursuit

By Thibaut Milville

Software Used: 3d Studio Max, V-Ray and Photoshop



Introduction

This image is the first of a series devoted to the 1970s American muscle cars. For this illustration, I wanted to pay tribute to all those old road chase movies, so I began by collecting references from inspirational films using the Internet Movie Cars Database (imcdb.org). This website is a great source of references; you simply choose the car model you're interested in modeling and the search engine gives you a list of films in which the car has been credited. Once I'd found some inspirational material for the scene, I then searched for a background that would fit in with the mood of the scene – a road in the middle of nowhere.

The choice of cars for this illustration was easy. My aim was to represent a powerful muscle car, famous in the movies of the 1970s, with a contemporary police car. The cop car had to be a threat to the muscle car, and I thought that bright headlights would give it a predator-type look. I also wanted the image to evoke the sensation of great speed, and to show that the pursuit had reached its apex.

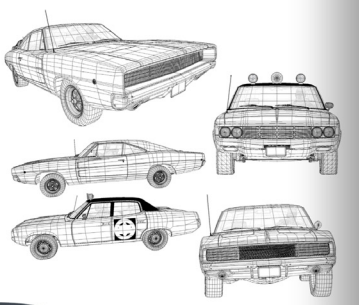


Fig 01



Fig 02

Modeling

The modeling was based on blueprints available for both models. I won't explain how to model a car with blueprints; high quality tutorials already exist on this and you can find lots of good quality blueprints on the internet. There are great websites that provide free downloads, such as the-blueprints.com, smcars.net or suurland.com.

The first car was modeled with great precision because I knew I'd like to re-use it for other illustration projects (because I'm really fond of this particular car model, I plan to render some close-up shots and integrate them into a vintage advert recreation soon). However, the second car was less detailed because it was always going to be partly hidden by the headlight effect, and I wasn't planning on reusing the model again. **Fig.01** shows the wireframes of the models.



Fig 05a



Fig 05b



Fig 05d

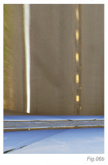


Fig 06b



Fig 05c

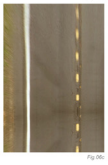


Fig 06c



Fig 03

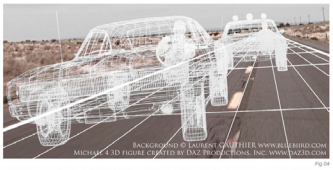


Fig 04

Because the characters were not main elements in the illustration I chose not to waste any time modeling them and instead imported DAZ 3D free models, textured and rigged in 3d Studio Max.

Shading & Texturing

I created very simple materials that looked as realistic as I could get them (car-paint, chrome, glass, rubber and so on) and then created a very rough and matte dust material. Both vehicles were shaded with a clean material and then covered with a layer of dust; the amount of dust was controlled by a grayscale mask. Depending on the material, this mask was either painted in Photoshop or was a mix of a procedural smoke and a VRayDirt map. **Fig.02** illustrates the effect of the dirt map.

Tires were modeled simply; details were rendered with a displacement map. In order to save time during the rendering process, I built a “tire texture pack” so that I could apply the right texture for the right speed, and it was much faster than computing real motion blur. I also used a space deformation to simulate the weight of the cars and the flatness of the tires. You can see an extract of my texture pack and how it works whilst rendering in **Fig.03**.

Composition

The difficulty with this image was to make the viewer believe that the cars were really on the road. To manage this, I had to solve two problems: the perspective of the scene had to match the background, and the reflections had to show the environment around the cars.

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The scene was very simple: a road, two cars and a desert environment. A directional light simulated the sun and the camera was manually positioned so that the wire road matched the background. The cars were then put in the right place to create a feeling of tension in the pursuit. In order to help me during the construction of the image, I animated the whole scene and chose the frame that gave me the right feeling. You can see the scene wireframe in **Fig.04**.

The Background

I chose a clean background which was too sharp and gave no impression of speed (**Fig.05a**), so I needed to add some motion blur to it. It had a small vanishing point, and a zoom blur could have made the sensation of speed. But this sort of blur effect was constant all over the picture and it didn't give the right feeling (**Fig.05b**). Only the elements close to the camera should be blurred; distanced elements had to remain sharp. So I built an infinite plane to model the ground. The background was baked on this plane thanks to the camera mapping. I then used a dolly camera that moved as the spectator, and I rendered the scene with motion blur (**Fig.05c**). That did the job!

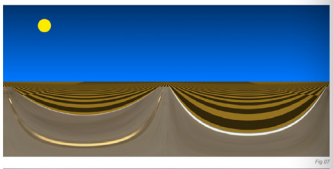


Fig.07



Fig.08

Texturing the Road

To make the texture of the road I used the same camera mapping as for the background (**Fig.06a**). A render to texture gave me a raw map (**Fig.06b**), and after a few edits I had a texture that perfectly fitted the environment (**Fig.06c**).

Painting the Environment

To render believable reflections I needed an environmental texture which was compatible with the background. I put a camera at the center of my scene and rendered an equirectangular picture of the spherical environment. As a blueprint, this picture gave me the lines of the environment in order to paint my spherical map (**Fig.07**); it was not aesthetic, but very effective. I then added the sky and natural elements to reproduce an environment that fitted with the background (**Fig.08**). (As long as you pay attention to the Creative Commons license, you can find free and high quality equirectangular images on flickr.com which could help you to create your own environments.) A test render with a chrome sphere at the center of the scene allowed me to validate the quality of the texture (**Fig.09**).



Fig.09



Fig.10a

Rendering & Post-Production

The scene was illuminated by a directional light which simulated the sun, and a contrasted environment texture was used as a dome light. Specular effects were rendered partially and retouched in Photoshop, and the lens flare effects were created and tweaked in Photoshop. The image was then reconstructed from the different V-Ray passes (**Fig.10a – b**), and after a slight motion blur and color correction, the process was complete.

Conclusion

This image took a lot of my time to get it finished, but I learned so much more from the creative process than I could have expected, and I'm pleased to have been able to share my experience with you. I certainly hope you've enjoyed reading this.



Fig.10b

Artist Portfolio



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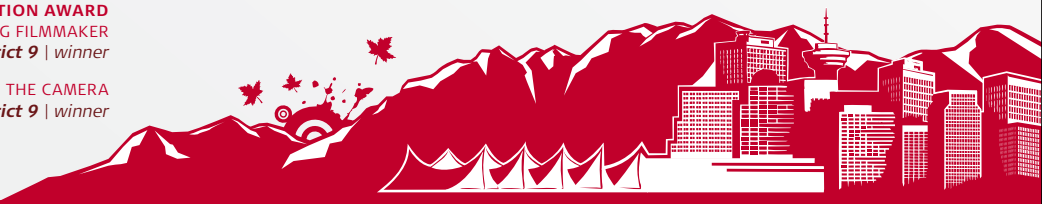
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ENVIRONMENT LIGHTING: OUTDOOR

Chapter 3: Moonlight





CHAPTER 3 - MOONLIGHT

Software Used: 3ds Max + Mental Ray

INTRODUCTION

During this exterior lighting series I will be covering the techniques I used to create various time and weather conditions using 3DS Max and the Mental Ray renderer. I will be concentrating on describing my lighting methods rather than any modelling or texturing that may need to be done. I have created as much of the image as I can in Max; leaving the Photoshop 'polish' to a bear minimum to achieve the final result.

When I think of moon lit I automatically think of a full moon with no cloud cover. As with most urban night scenes you can't just rely on the moon light to light your image. Using the first tutorial in this series you can see I used interior lighting to help pick out detail within the image and help tell a story, which is the most important step of creating any art work. If an image doesn't tell you a story or give you something then what is the point of it? So I will again use the moon light to illuminate the scene but to add character I will use the internal lighting.

IDENTIFYING LIGHT SOURCES

I want the moon light to come from behind the buildings and hit the right wall of the alley, this would give me a nice shadow from the roof tiles to add some interest. I would like to add some 'fake' environment off camera to give me more points of interest similar to what was covered in the previous tutorial. Instead this time I wanted something more organic so I went for tree shadows across the face of the buildings on the left and right. Because the moon light was coming from the rear a natural shadow of the trees would not be possible, to get round this you can use street lights that are again off camera but cast enough light so the tree shadows can be cast into the scene. For the interior lights I will use the same process as the previous tutorial 'Foggy and damp' where I carved out 'fake' rooms and placed a light to simulate an interior light source.

Here is the Image before any lighting has been applied. (**Fig.01**)

SETUP DRAFT RENDER

When lighting any image, you can't expect to achieve the final result first time. In anticipation of a lot of 'tweaking', I setup the renderer to a



Fig.01

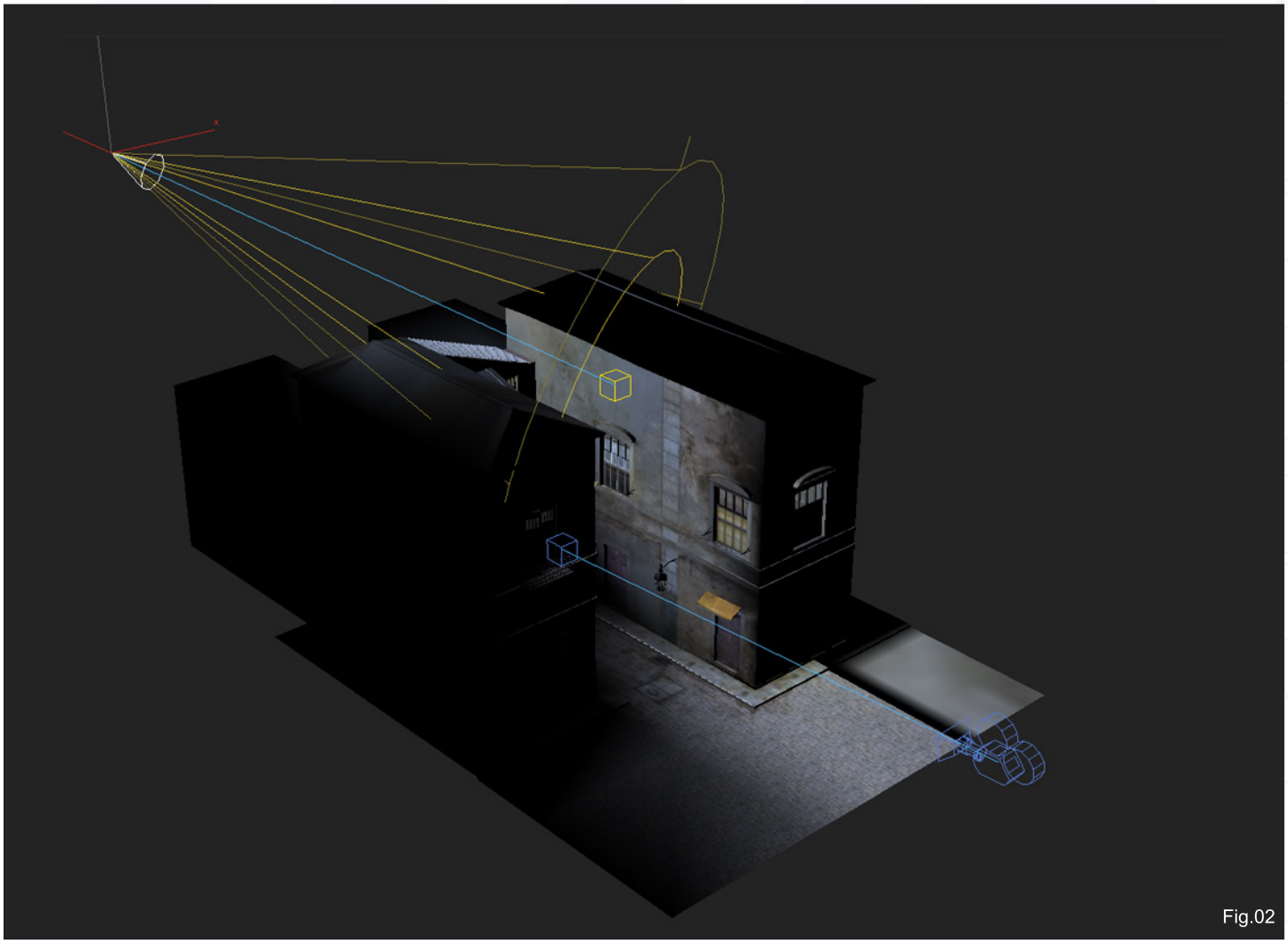


Fig.02

draft setting so it sped up the render times to a more workable rate. I set the render size to 360*480 and in the indirect illumination tab I set the Final Gather to draft and the bounce light to 0. This will allow me to render out as quickly as possible.

MOON LIGHT

I used a MR-Area Spot light for the moon light and pointed it at the right wall of the alley way. I set the multiplier to 3 and enabled Ray traced shadows this would give us the harder edged shadow that you would typically get from a strong moon lit night. I gave the light a light blue colour.

Here is an image of the position of the light in the scene (**Fig.02**)

Here is a render of what we have so far with just the moon light applied. (**Fig.03**)

Ok it's not very interesting at the moment but it doesn't need to be, we just need to concentrate on getting the moon light to look good then we can fill the scene out and create a nice composition.

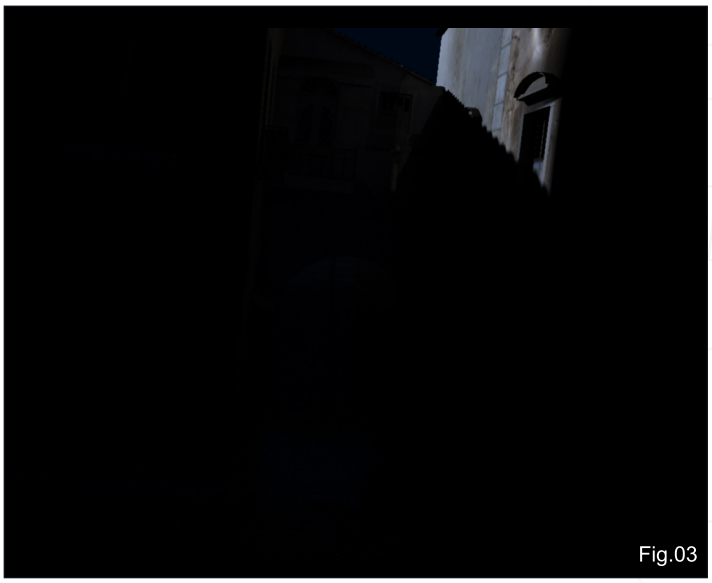
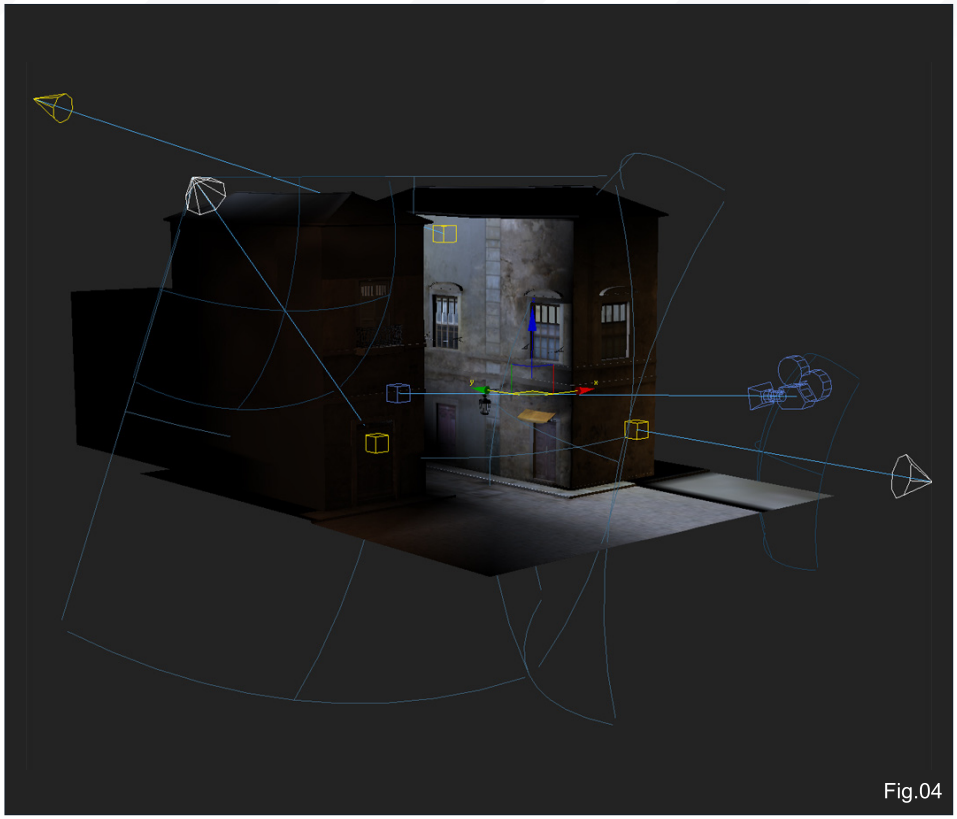


Fig.03

For the tree shadows I used a projection spot light, this allows you to add a texture to the light, this texture will then cast light. So I used a black and white image of a tree silhouette (Just do a internet search for tree silhouette and you should be able to find a good black and white tree texture). The white areas of the image will be lit and the black area will

be in shadow. You then place that image in the projection map slot located in the 'Advanced Effects' tab of the light settings. I pointed this light at the wall on the right hand side and gave it a yellow/orangey tint this gave the illusion of a street light casting the light. I then duplicated the light and pointed it at the wall on the left hand side.

Here is a perspective view of the whole scene with my fake tree lights. (**Fig.04**)


Fig.04

Here is a render of the newly placed tree shadows. (**Fig.05**)

I'm happy with the tree lights and the moon light but the shadowed areas are a little too dark.


Fig.05

With such a strong moon llight you would get some bounce light lightening up the shadowed areas so I placed a MR Area Omni light higher up in the scene and towards the front of the alley way. I gave this light a very low power of 0.1 and a grey/blue tint giving us the effect of the night sky brightening up the dark areas.

Here is a render of the image with just the natural lighting applied.. (**Fig.06**)


Fig.06

I'm now happy with the environment lighting so I moved onto the interior lighting to add life to the image.

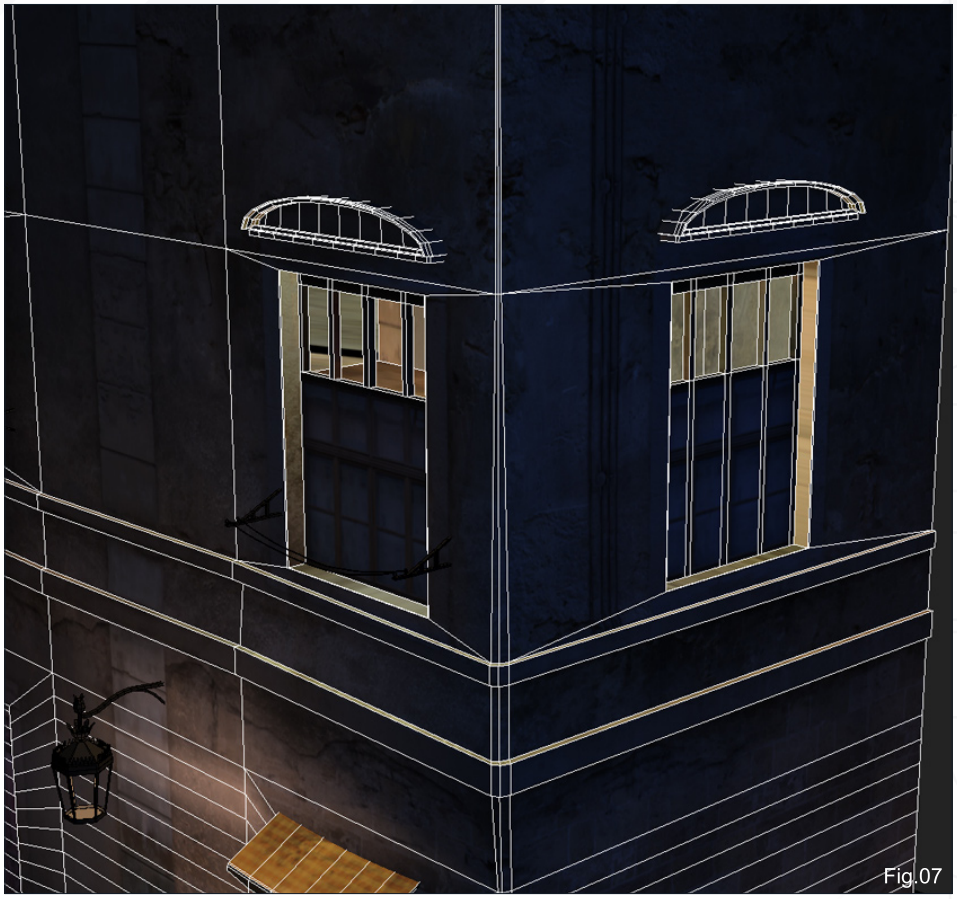
Adding the Interior Lighting

For the interior lighting I used the same methods as described in the first chapter of this series of exterior lighting. I carved out 'fake' rooms and hollowed out the window panes so the lights inside can escape the rooms and help to illuminate the street.

I decided I would light the top floors only for this image because not only do we have the street lamp lighting the alleyway we also have the tree projection lights on the walls and I don't want these to get washed out as they serve a purpose of setting the mood for the image.

I created a simple box that is open ended and made sure it surrounds the window area. I then cut out the window panes using the window texture as a guide. I used this technique for all the lit windows and doors.

Here is an image of a 'fake' room and cut out window panes (**Fig.07**)


Fig.07

I used a MR_area_Omni light in all of the fake rooms, then duplicated them into all the other rooms keeping the setting the same for now. All the lights have an orangey colour and slightly different powers. The doors upper left of the image have a power of 7.0 this is the most powerful light as its closest to the camera and quite full on facing the camera. The windows upper right have a power of 5.0 again quite bright as it's close to the camera. The light in the small window on the back wall has a power of 3.0 so slightly lower again as it's getting further away also as it is supposed to be a little side room the light inside would not be too bright anyway. And lastly the light in the door on the back wall has a brightness of 2.0 as the opening in the door is quite large the amount of light that escapes the fake room will be quite high so a lower power will help maintain the escaped light. So with all the lights set up accept for the street lamp lets do a quick render to see how this looks.

Here is a render of the scene so far (**Fig.08**)

For the street light I used 2 Omni lights, the first light had a very small radius, just enough to include the interior of the street lamp object. This light would help to illuminate the inside of the lamp to give the illusion of a light bulb. This light had a power of 20 and had a lighter orangey colour. The second Omni light was placed outside the street lamp and had a larger radius but a lower power this would act as the light being cast from the light bulb illuminating the alley way. The light had a power of 2 and had the same colour as the first light.

Here is an image of the position of the lights (**Fig.09**)

Medium Render

I set the renderer to medium image precision and medium Final Gather settings. I still haven't enabled bounce light yet as it would increase


Fig.08


Fig.09

the render times. I increased the size of the render to 800*600 With these settings I was able to see any problems that may occur.

I was quite happy with the medium sized render and I couldn't see any major issues. Some colour correction needed to be done in Photoshop but this is normal with any image; it adds that extra bit of polish to the art work. I was now ready to go ahead and set up a high quality render.

Final Render Setup

Here are the settings used for the large final render (**Fig.10**)

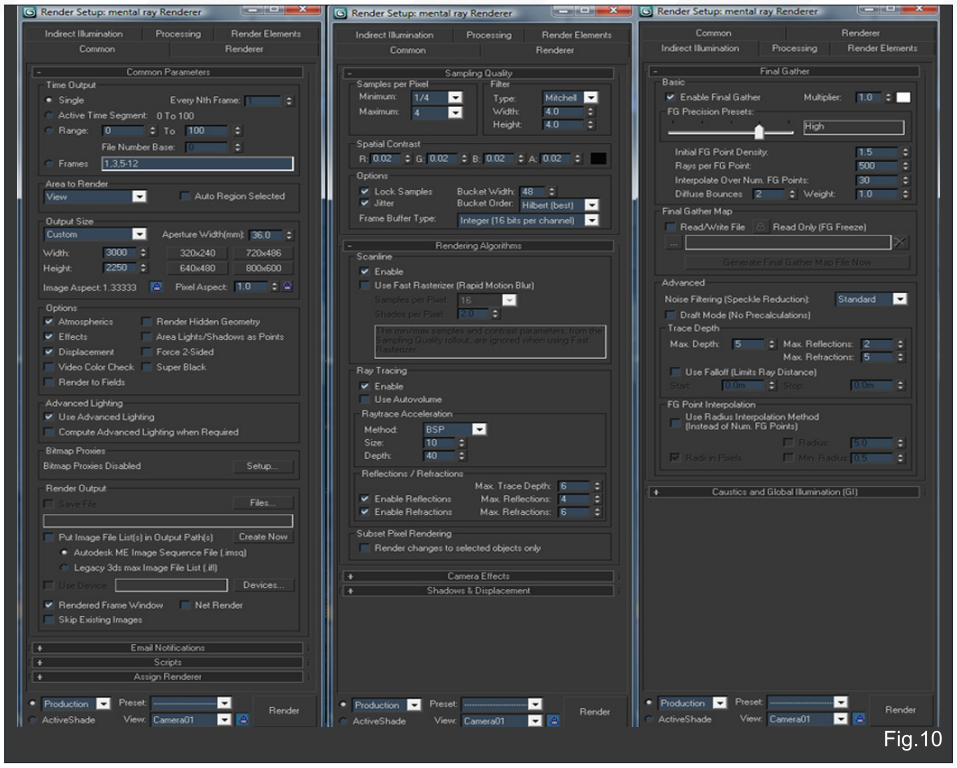


Fig.10

I shall use Alpha and ZDepth render elements and composite them in Photoshop to help me get the best image possible.

So with everything set up it's time to hit that render button for one last time!

Here is the final out come from the Mental Ray renderer. (**Fig.11**)

Now that we have everything we need we can import them into Photoshop and start the polishing stage.

Photoshop Composite

The First thing I will do in Photoshop is import the render element 'Alpha Channel' to the alpha channel of the rendered image. This cuts out the geometry from our render and leaves us with a empty sky area. At the beginning of this tutorial I said I wanted a clear sky so a good way to get that point across is to have stars visible. I don't want there to be to many stars, just subtle enough to give the impression of clear sky but not grab your attention away from the street. So after a quick search on the internet for a night sky I found a good image with just the right amount of stars. So I placed this on a layer behind the rendered image and scaled it in place to get the desired effect. Once I'm happy with the sky I flattened the image so I'm only working with the one layer. I do this so it's simpler for me to edit the image.


Fig.11

I used a 'Levels adjustment layer' to bring out the darks and highlights a little more this adds a lot of quality to your image and is an important stage of the polishing process. I then added a 'Colour Balance Adjustment layer' and brought out the blues and greens a little more this would help to convince the viewer it was night time. I then added a little 'Depth of Field' to give us a photorealism look. I achieved this by putting the Z-depth render element into the Alpha channel of the image and in the effects menu added a Lens Blur effect and set it to use the Alpha channel. After adjusting the settings I was able to get a realistic effect but be careful not to over do it, it's easy to over blur the image and ruin the effect so subtlety is the key at this stage.

The good thing about Lens Blur is you can add specular blur to your highlights in the image further enhancing the photorealism we want to achieve.

Here it is, the finished Image. (**Fig.12**)

Conclusion

In conclusion I feel I managed to create a good moon lit environment using different lighting techniques to create the desired mood and atmosphere. I hope this tutorial was easy enough to follow and help you to create some great lit environments. See you in the next tutorial.

Tutorial by:
Andrew Finch
For more from this artist please contact them:
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Fig.12

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ENVIRONMENT
LIGHTING: OUTDOOR

Chapter 3: Moonlight





CHAPTER 3 - MOONLIGHT

Software Used: 3ds Max + V-Ray

Before placing a single light in a piece of 3d software, it's good to spend a while, looking at the scene, and thinking, imagining a bit. The assignment is pretty clear – moonlight is the 'prime directive'. But that is not all that matters. Composition of the image is important, regardless of the lighting scenario we have to achieve – and that too can influence light placement, strength and color. Visual style and art direction is important as well – is it supposed to look real, photo real, stylized? Finding some reference can suggest a few ideas, how to achieve our task. It's also good to think about technical's – is it going to be a still image, or is it for animation, should it render really fast, or maybe we have some computing power at our disposal? But nowadays, when the computers are fast, that's not always a problem.

Creating a moonlit scene can be tricky. There are few reasons for that:

- We don't often see moonlight at work. Sure, full moon nights with clear sky are common enough, but light pollution is even more common. Street lamps and other man-made light sources are much stronger, and at night, it's those that are most visible. Even in the countryside, you'll most likely see a glow from the nearby city or village. So pure moonlight is a rare sight.

- At night, human eye sees much less colors than film or digital sensor can see. Hence, what we see, and what we can photograph, can be two different things.

- If we try to photograph a moonlit scene, and use long enough exposure time, we'll get an image looking almost like daylight, with tell-tale arcs left by stars, as the earth rotates. That kind of image, while it can be quite interesting, may not be instantly recognizable as moonlit night.

- Well, its night, its dark – we have to be careful, or the image will end up dim and low-contrast, with no depth and no colors. Not a very nice prospect.

So what can we do to, if we need moonlight? Then same thing the filmmakers do, when shooting a night scene – create the feeling, the impression of moonlit night, using some well known visual clues.

- Color palette is crucial – dark, often almost monochromatic, usually cool (most often in muted gray-blue hues, sometimes muted green shades as well), with few strong highlights. Saturation is usually quite low.

- Key light is quite strong, but is usually placed at an angle, or even at the back – strong back light is quite characteristic here. Having the moon in the frame nicely motivates said back light.

- Also worth noting, such light will be at gazing angle to many surfaces in the scene, and will catch a strong highlight on the shiny ones. Special case of such surface is water – it can reflect the moon in a really beautiful way, and, being very bright, can help balance the composition, acting as a visual 'counterweight' to the bright moon face.

- Shadows are important. The Moon usually produces sharp shadows, unless it's covered by clouds, which can soften the shadows quite a bit.

- Fill is quite weak, so by contrast, the highlights seem brighter. For characters, a warm fill might work well.

- Atmosphere (fog, mist, smoke) can be very useful, allowing us to use silhouettes of the objects – but its usage depends on the required mood. You can achieve quite striking images by working with silhouettes alone.



Fig.01

When looking at a night scene, we kind of expect to find some of the above properties. We are used to them, by years of watching the movies or paintings (just take a look at 'nocturne' paintings by Grimshaw or Turner - (**Fig.01**), compared to actual photos). And if we want our setting to be instantly recognizable, and visually attractive, it's often good to keep them in mind.

Now let's take a look at our scene (**Fig.02**). No


Fig.02

water surface here and only a tiny piece of the sky. We could try to use moon as a back light, but it could only reach a tiny part of the scene, with most of it left in the dark. That could work, but I'd like to try something else. Something like a light coming from the side, filtered through the tree branches, with slightly soft shadows. Not much in a way of interesting silhouettes to play with, so some direct light will be needed. And as its light that's important here, not atmosphere, the fog will be very subtle. As you'll see, the

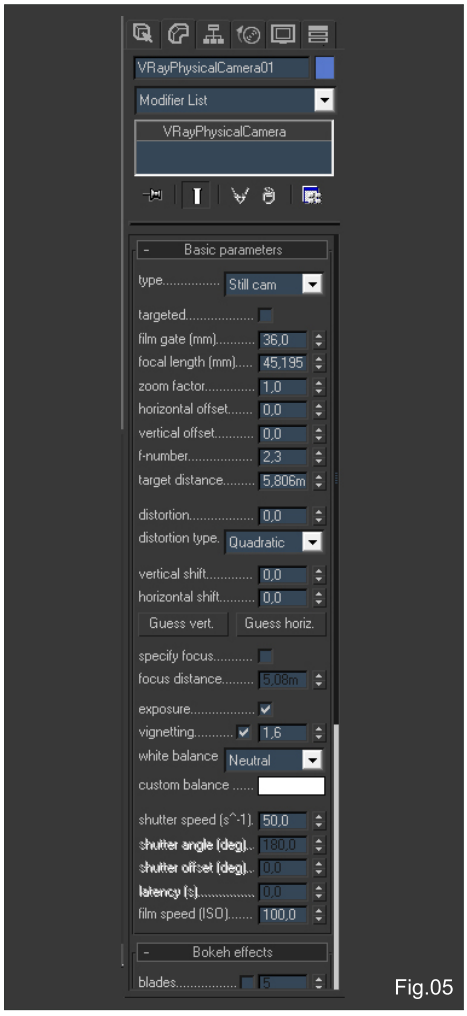


Fig.05



Fig.03

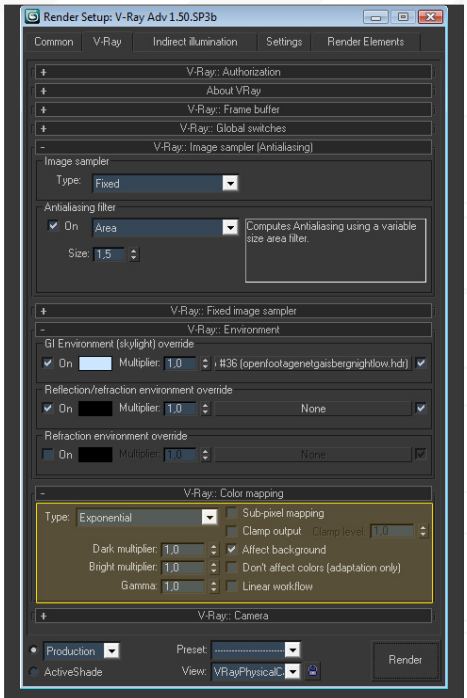


Fig.04

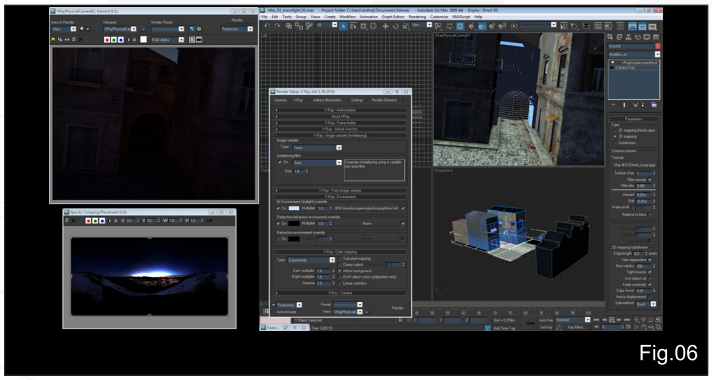
above 'rules' are more like guidelines than law, and you can bend or break them, if you know what you want to achieve.

To render the scene, I'm using 3dsmax with Vray, with GI turned on. I most often use Irradiance Map for first bounce, and Brute Force for the secondary bounces – that is the default setting, which works for me in most cases (**Fig.03** – preview settings). Detailed settings, like number of bounces, or Irradiance Map size of course vary over time – low quality for previews, higher for final rendering. For still images, as in this case, I try to use fastest (lowest) setting possible, while still getting acceptable result. For animation, the Medium Animation setting is usually safe, flicker free option. I also use a hint of global Ambient Occlusion to add some detail to shadowed parts of the image.

One of the first things I usually do is setting the Color Mapping to Exponential (**Fig.04**). While this isn't probably the most physically correct way, it has some advantages. The way it works, it prevents over bright 'hot spots', and over saturated color transitions. It's also very tolerant – it's really hard to whiteout the image, and the lights have a very wide range of usable multiplier/strength setting (but that range often ends up being pretty high, like 512 or so, especially with the fog on). It has downsides, too, making the colors look desaturated, and decreasing the contrast of the image. I actually like it that way, because I can easily bring back the contrast and saturation in post production, and for some scenes it just fits – but if you don't like it, there's HSV exponential mode, which keeps the colors better. Generally, though, main use I have for default, Linear Multiply, is rendering some additional passes, like masks.

The scene needed some preparations – adding VrayDisplacement to the street surface, some reflections to the windows (using blend material, VrayMtl for the windows, and a b&w mask). Metal parts, like railings and lamp also got a shiny, reflective VrayMtl.

Before rendering anything, I created VRayPhysicalCamera, so I could control the brightness of the scene in more intuitive way (as I have a bit of photographic experience). The settings pictured on (**Fig.05**) took some trial and error to get them right – generally, if the scene is more-or less build in real world scale, the

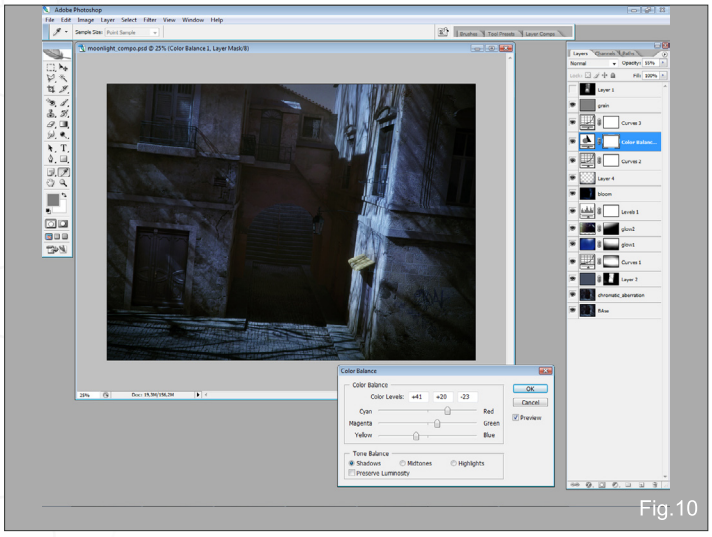

Fig.06

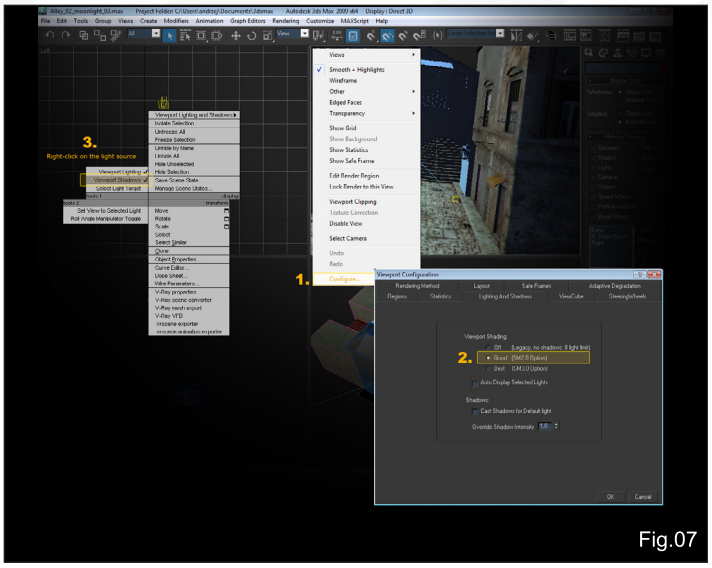
settings that would work if we were to take a photo of that scene in real life, are a good starting point. The Vignetting option is quite useful here, darkening the corners of the image, and focusing the viewer's attention at the central part of the image – here, I used it very sparingly.

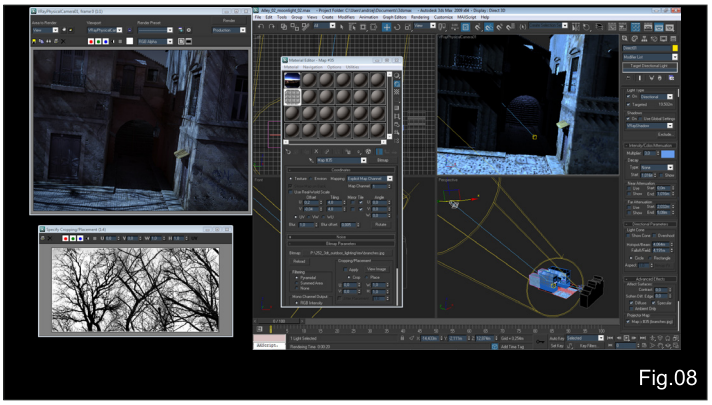
I started lighting by setting up the fill (**Fig.06**) – in this case, a HDR image of a night city. In nicely introduces some subtle color variation. We need to add some geometry to block it from the front, though – as in real life, where buildings on the other side of the street would occlude some of the sky.

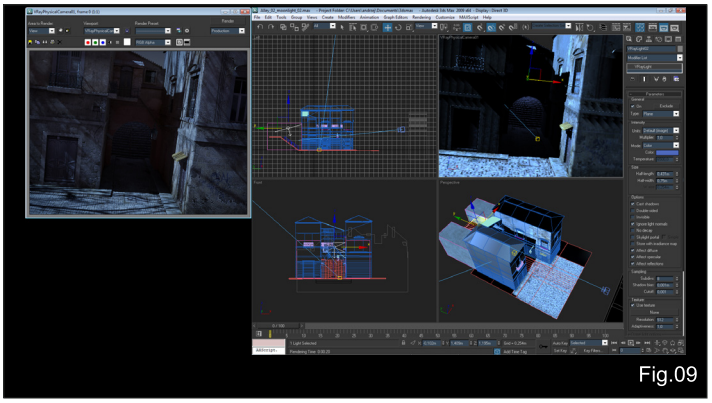
Next in line was the moon. It took some tries to find a nice angle, but the time it takes can be shortened by enabling Viewport Shadows display (**Fig.07**). The Moon is a standard blue-colored directional light, with Vray shadows, and hotspot tweaked to the scene size. I used a tiled black and white image of tree branches in the projection slot (**Fig.08**). The projected image is blurred a bit, to match the real shadow softness. Notice how nicely the bump mapping on the walls work – that's one of the benefits of light angled to the side (or raking light, as it's sometimes called).

And as a last tweaks, I added an area light behind the arch, above the stairs, so they catch a nice subtle highlight, adding a bit of depth to the scene (**Fig.09**), and increased main light multiplier a bit. I was considering


Fig.10


Fig.07


Fig.08


Fig.09

adding some man-made light source, like a window-light or the street lamp, but in the end, I decided against it – it would have lessened the impact of the moonlight in the scene.

In post production, I did some subtle color correction, adding some red and green to the shadows, and blue/cyan to the highlights – it works quite well, even if it's the opposite of what I'd do on a 'normal', daylight image. I also added a hint of fog using Zdepth pass, some highlight glow, some grain, and a tiny amount of chromatic aberration – simple tweaks, really (**Fig.10**).

As it turns out, achieving a moonlit scene was quite easy, with just two light sources and some GI (**Fig.11** – final image). While technically simple, that kind of scene requires some pondering and a bit of 'cheating' – I tried to think about our scene as a movie set, not only as a real street late at night.

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Fig.11

This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

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Fog/Mist at Night-Time

Chapter 2 | February Issue 054
Sunrise/Sunset

Chapter 3 | This Issue
Moonlight

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Midday Sun

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Overcast

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ENVIRONMENT LIGHTING: OUTDOOR

Chapter 3: Moonlight

CHAPTER 3 - MOONLIGHT

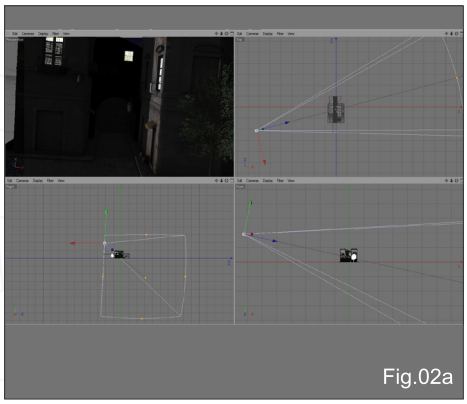
Software Used: Cinema 4D 11.5

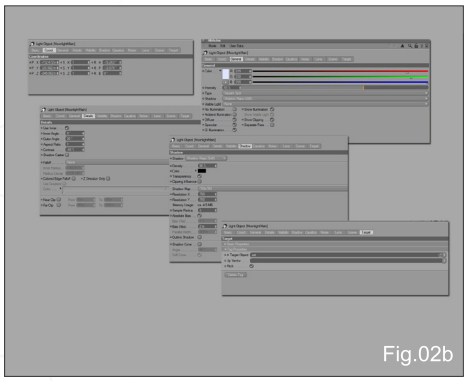
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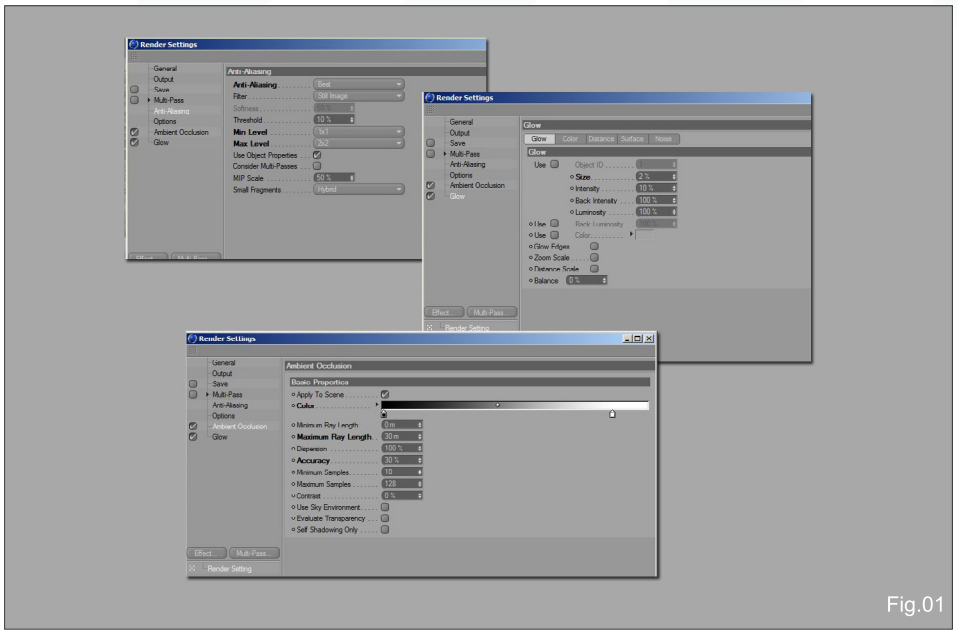
This is the third part of a series of lighting tutorials for Cinema 4 D.

The files of this tutorial were created by using the release 11.5 but I had no problem to open them in release 10.R or 9.6 but I'm afraid earlier does not work, sorry.

Concerning the fact, that not everybody owns the Advanced Render or a third party render, I try to concentrate on the functions of the core-render in Cinema 4D as far as possible. So it should be possible for everybody to follow this tutorial. As you might see over this series of tutorials, using classical ways of illumination does not mean you get bad results. Another point is that features of Global Illumination (or Radiosity in earlier versions of Cinema 4d) have strong differences in their workflow, parameters and functionality in combination with the release


Fig.02a


Fig.02b


Fig.01

used for your work. The attributes manager contains a folder for the different settings. In the screenshots I only show up areas where changes have been made, the rest is still in default. So let´s start...

CHAPTER 3: MOONLIGHT

In the first part of our series of tutorials we had night in combination with fog or mist. Now we want to create a scene covered by moonlight only (besides some artificial light sources).

THE RENDER SETTINGS AND THE MATERIALS

When we look at the render setting menu, we can see that I used ambient occlusion which is part of the Advanced Render (**Fig.01**). If you do not have the AR it is not an essential feature to follow this tutorial. It just looks nicer ;) The other point is sub polygon displacement. To get a work around, just subdivide the meshes and use the normal displacement in the material manager. To get an overall illumination effect, I added a luminance of 4 to 5 % to every material in this set file. This allows us to get an extra gi-fake effect.

The render resolution very much depends on the performance of your system, but using a width of 320 pixels might be too small.

The glow I activated here could be done in post production work also. If you have problems with your render speed while using anti-aliasing, you can of course set it to "None". Looking at the render settings, you might discover, that I added some glow to the scene to get that certain moonlight mood…

THE MOONLIGHT

Well, this is our main key light for our scene. The light is going to in that case be "blueish" light coming from the moon which is reflecting sunlight, and further filtered through the earth`s atmosphere. In general I tend to use a lower contrast and strength. The fact, that humans have a certain weakness of recognizing colors at low light levels must be taken into consideration. (**Fig.02a – 02b**)

THE INDIRECT MOONLIGHT

Now we try to simulate the light reflected and diffused by buildings and even the sky itself. As you watch at the figures, you might discover that I used a combination of adapted omni-lights and spotlights concentrated on the surfaces of the buildings in the scene. The aim is to get a nice appearance and mood. Using in-and exclusions here is a good way to control the amount of light every part is getting. (**Fig.03**)

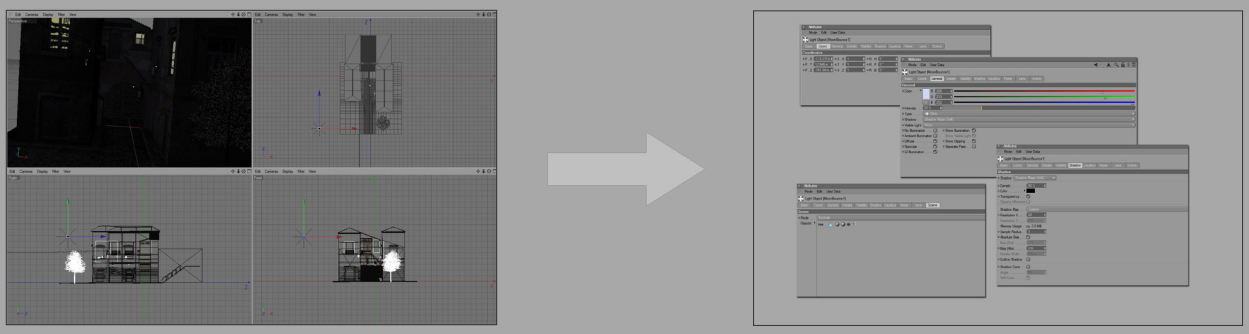
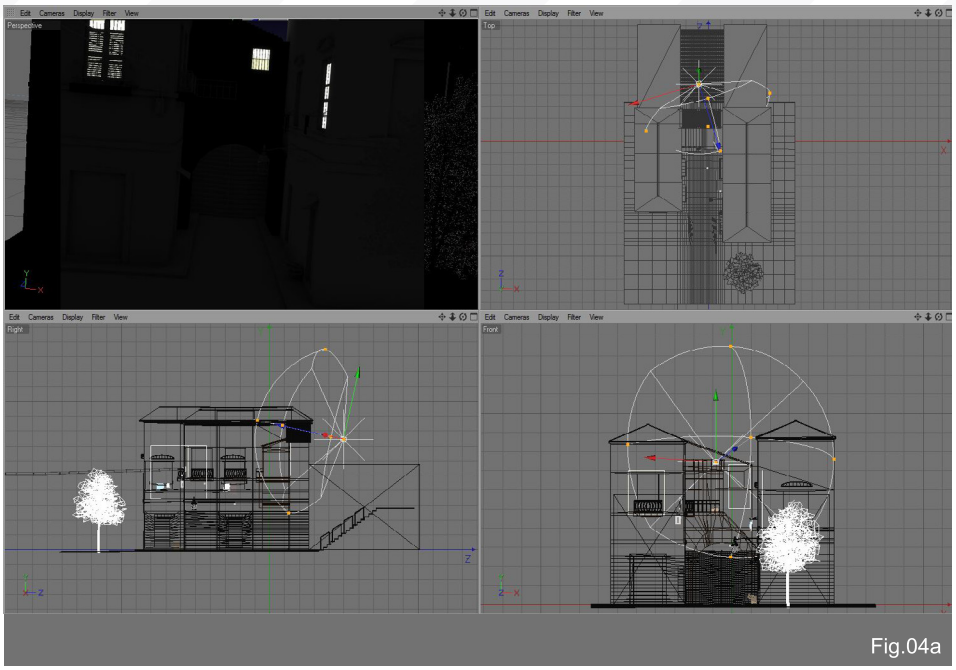


Fig.03

To indicate light coming from the background behind the buildings I added a background bouncer which is working in a more subtle way. (**Fig.04a – 04b**)

As we now take a look at the result of these activities we get an impression of the final result we can get later on… (**Fig.05a – 05b**)


Fig.04a

ARTIFICIAL LIGHTS

Certainly we could stop here at this point, but I want to create a kind of tension between the natural light of the moon and some artificial light sources coming from inside the buildings or points outside the camera`s view. As you remember in the first part of the tutorials, you might recognize that the lamp in the middle of the alley is now deactivated. In my universe the light went down just a few minutes ago. Another positive effect is that now the focus is settled more onto the whole scene instead of one point in the middle. As a 3d artist you often have to make these kind of decisions…

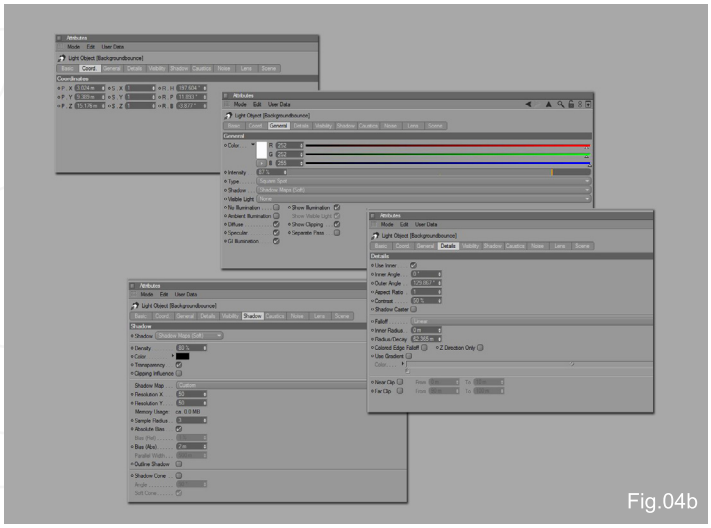

Fig.04b


Fig.05a


Fig.05b

LAMPS

To define the structure of the stairway leading into the background a light positioned like this makes a positive impact. Some other light sources simulate the light of streetlamps coming from outside our point of view. (**Fig.06**)

As a result of our efforts we get a layer like this. (**Fig.07**)

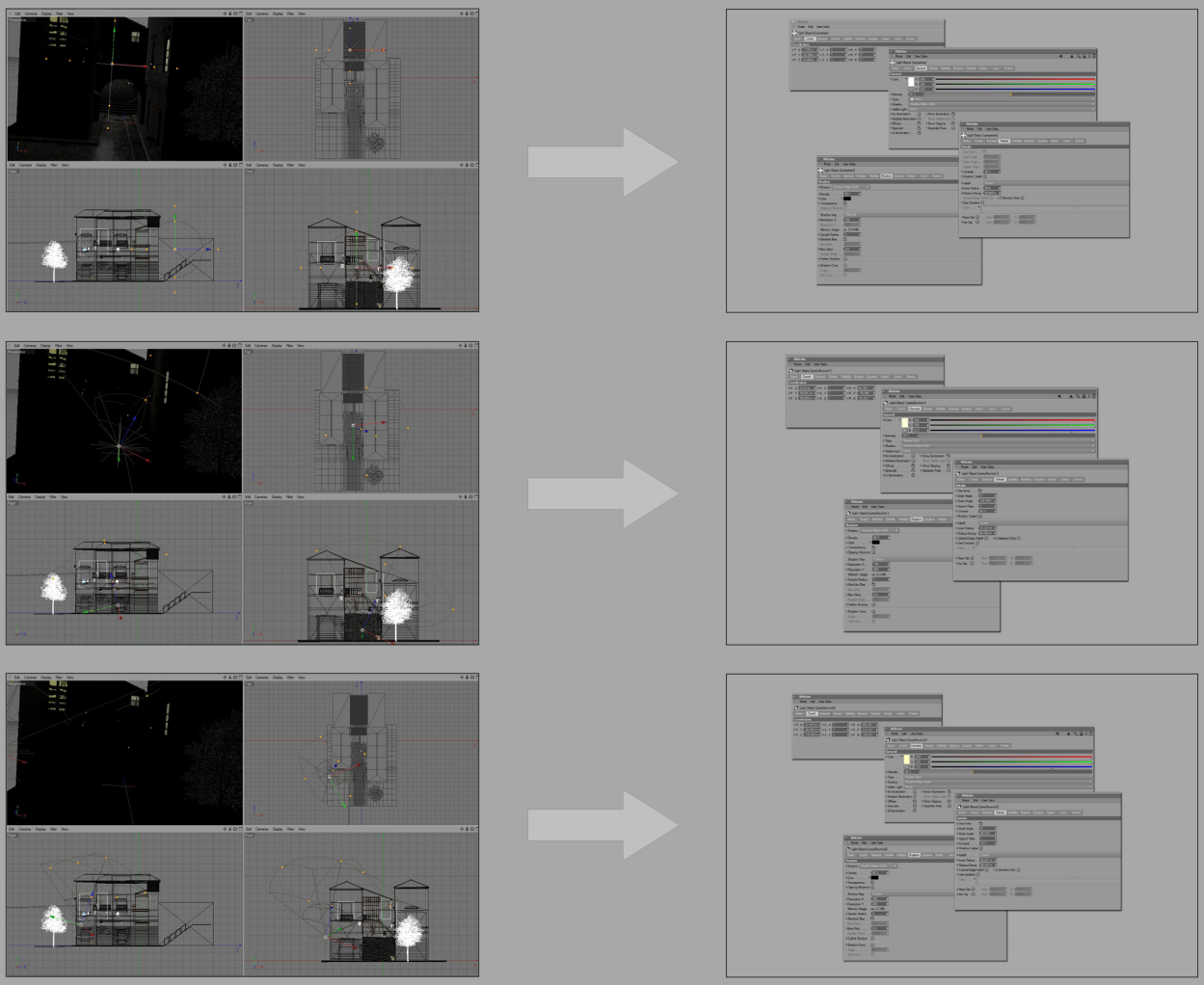


Fig.06



Fig.07

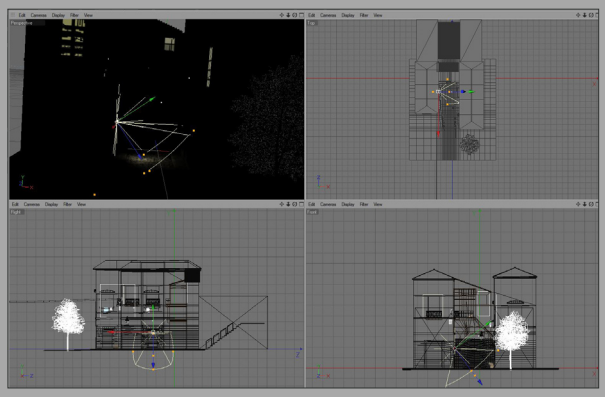


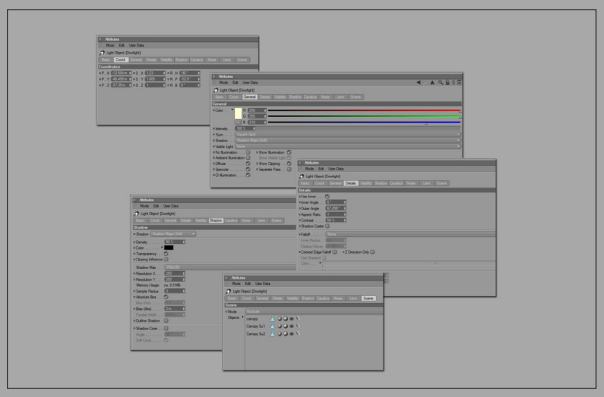
Fig.08

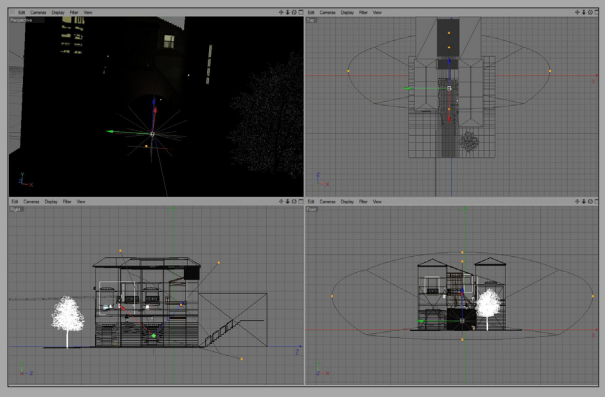
The combination with the “moonlights” should look like this: (**Fig.08**)

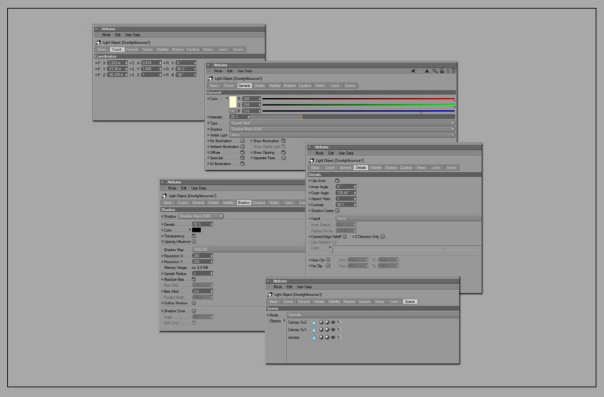
DOOR LIGHT

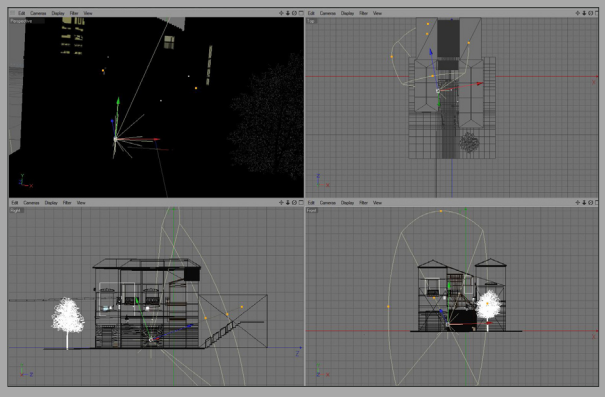
Like in the first tutorial, I added a light, coming from the door in the left building facing to the alley. Again we have a combination of direct, indirect or reflected light. This gives us the opportunity to avoid a “black hole” in our composition by illuminating the buildings in that way and creating additional depth… (**Fig.09**)

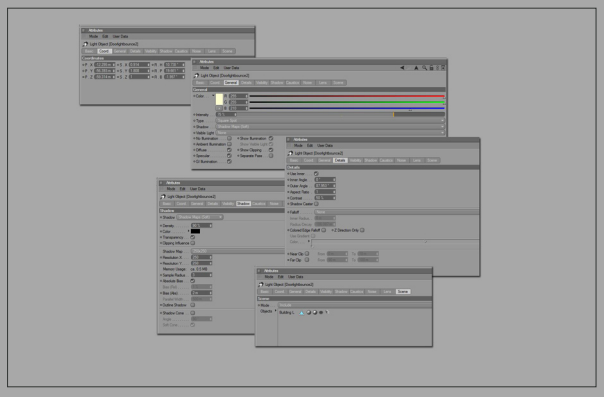


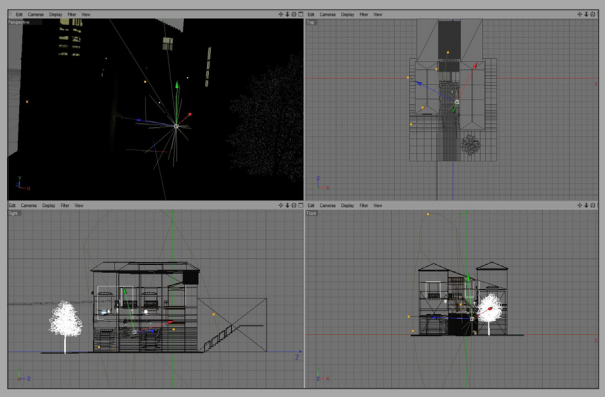












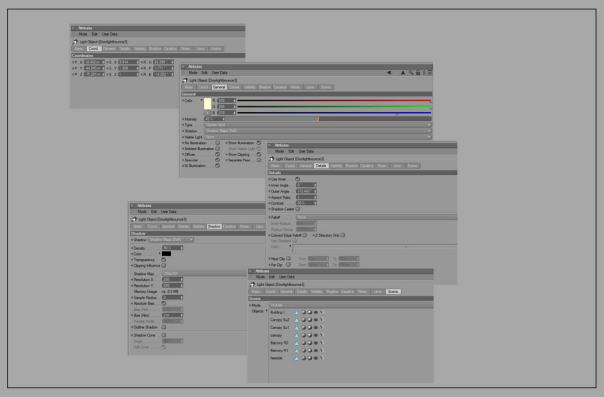
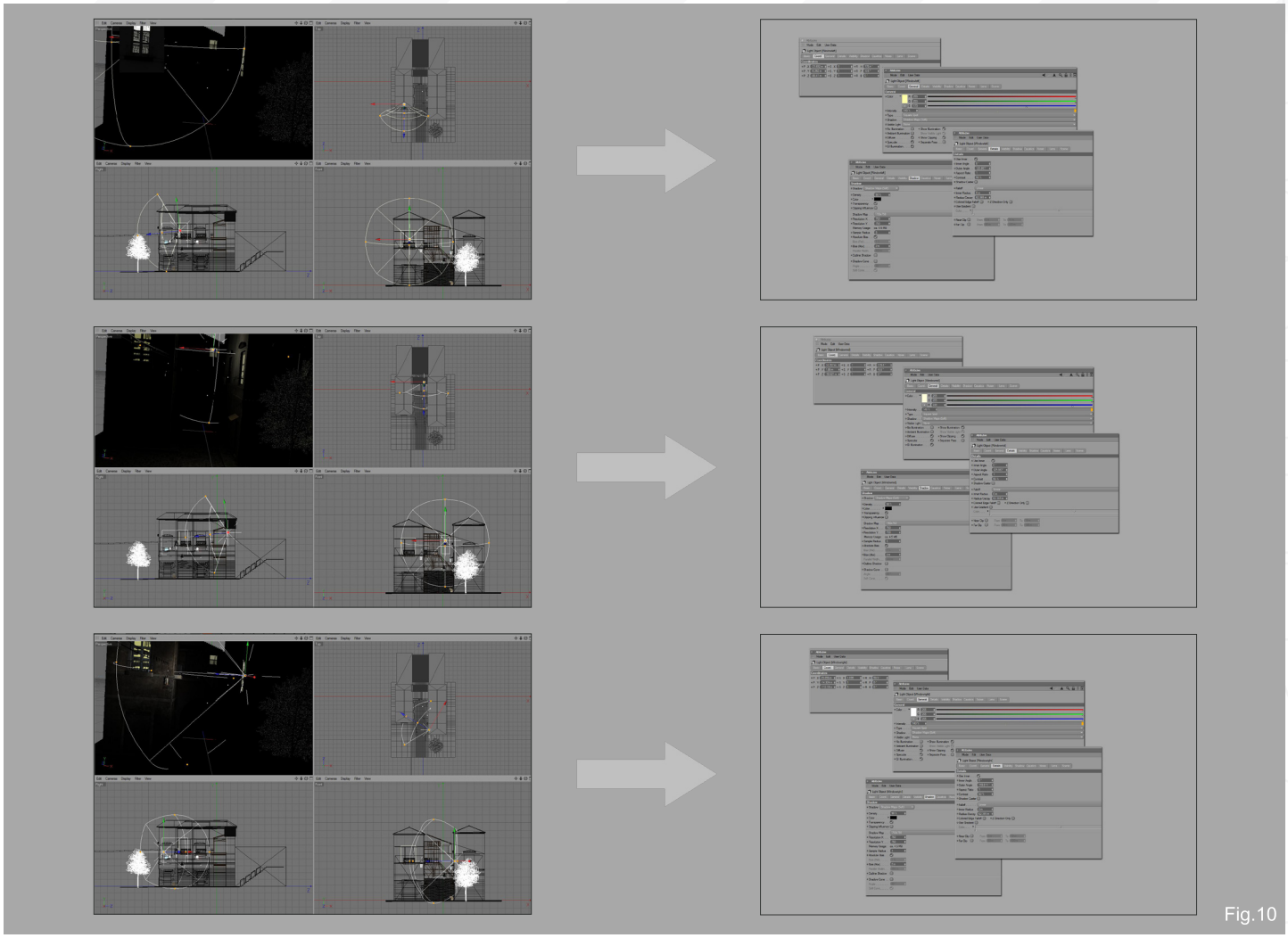


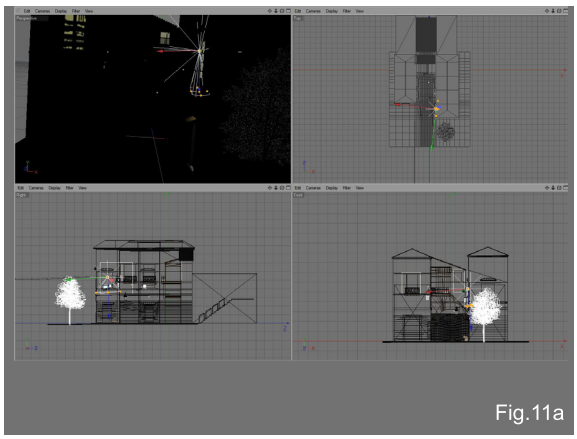
Fig.09

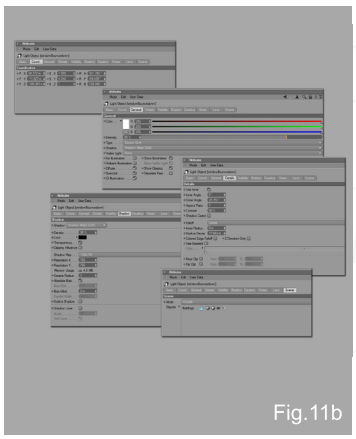

Fig.10

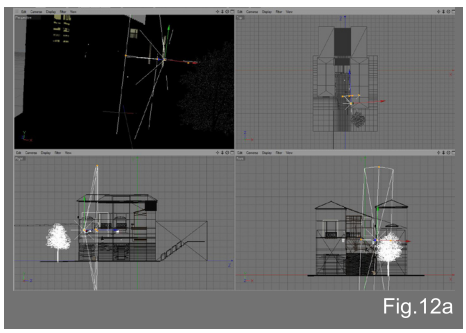
WINDOW LIGHTS

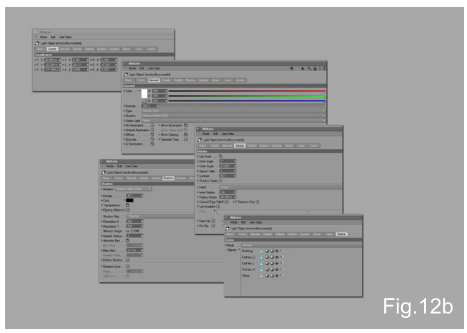
To let the illuminated windows take effect, we have to add some light sources coming from the directions of the light areas of the windows. (**Fig.10**)

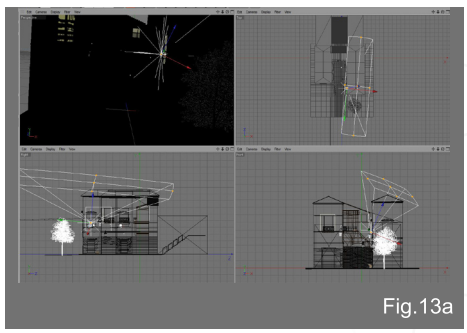
A simulation of bounced light around the window on the right side delivers an extra potion of realism (as you might remember: we don´t use global illumination but classical light setting in this part of the tutorials). (**Fig.11a –13b**)


Fig.11a


Fig.11b


Fig.12a


Fig.12b


Fig.13a

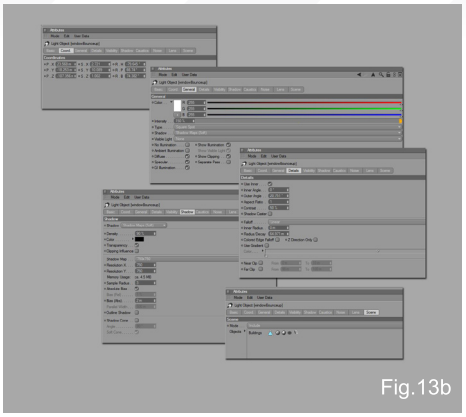
The accumulation of the light sources coming from the door and windows should look like this: (**Fig.14**)

RESULT

Now let us put everything together we did so far. This scene shows that a combination of various "light layers" can deliver a kind of moonlight atmosphere for our sample scene.

We have a rhythm of illuminated and shadowed areas which can be used to create a kind of dramaturgy for an image. So don´t be afraid of the dark ;)

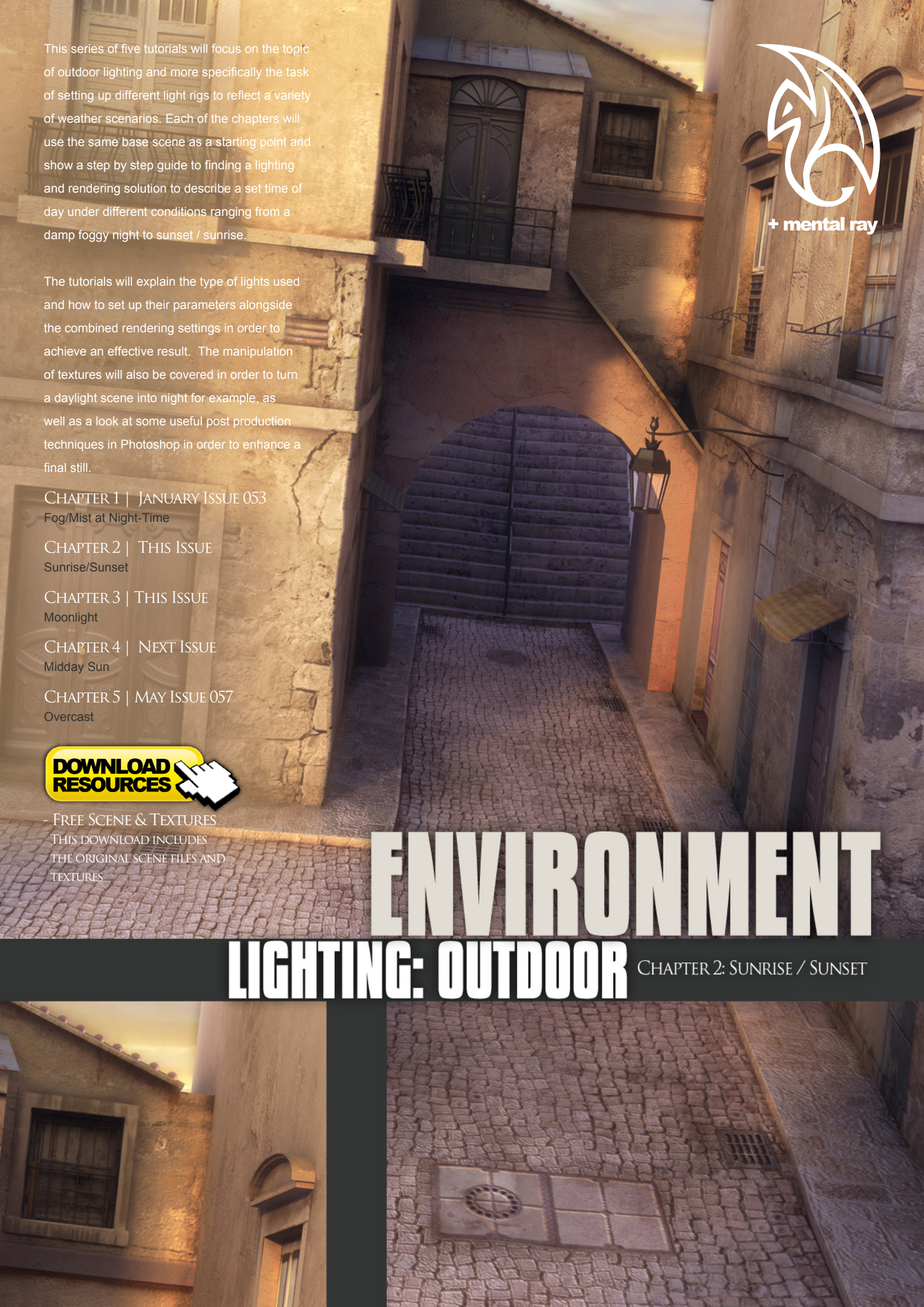

Fig.14


Fig.13b

That´s enough for the moment, I hope you enjoyed this tutorial.

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Moonlight

CHAPTER 4 | NEXT ISSUE
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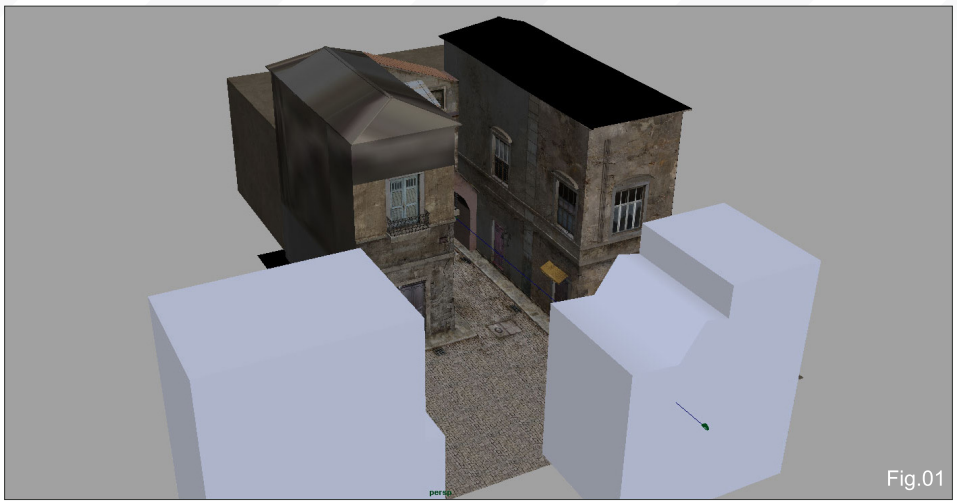
ENVIRONMENT
LIGHTING: OUTDOOR
CHAPTER 2: SUNRISE / SUNSET

CHAPTER 2 - SUNRISE / SUNSET

Software Used: Maya + Mental Ray

In this tutorial we'll create a light rig for a sunrise/sunset lighting situation using Maya, mental ray and Photoshop.

Let's start taking a closer look at the Scene.


Fig.01

Apart from the textured buildings, in the scene you will find a couple of simple meshes that will be useful to cast more interesting shadows in the environment; also, there's a camera which is already set up and will be used for our final rendering (**Fig.01**). There are no lights at all, so let's start creating a light rig for the sunset.

The first thing to do is set mental ray as default render engine. Open the Render Settings panel and in the Render Using tab select mental ray from the drop-down menu (**Fig.02**).

Leave all the other options as they are for now, and make sure that in the Common tab you are using a resolution of 640 x 480. We will increase the image size only for the final rendering, to keep render times as lower as possible during the preview phase.

We will use a really cool feature of mental ray called "Physical Sun and Sky" for our sunset scene, so switch to the Indirect Lighting tab in the Render Settings panel and click on the Create button next to Physical Sun and Sky (**Fig.03**).

This will create all the appropriate nodes and activate all the needed features to have realistic lighting for your scene. Also, it will create a direct light, sun direction (positioned by default at the origin, 0,0,0) which will represent our sun. (**Fig.04**).

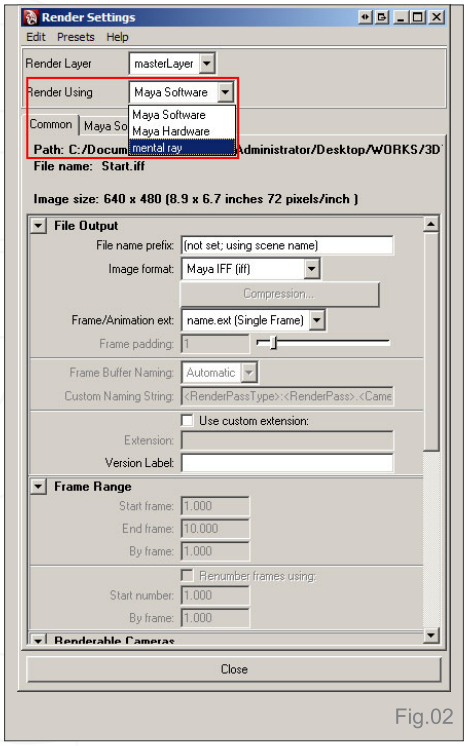


Fig.02

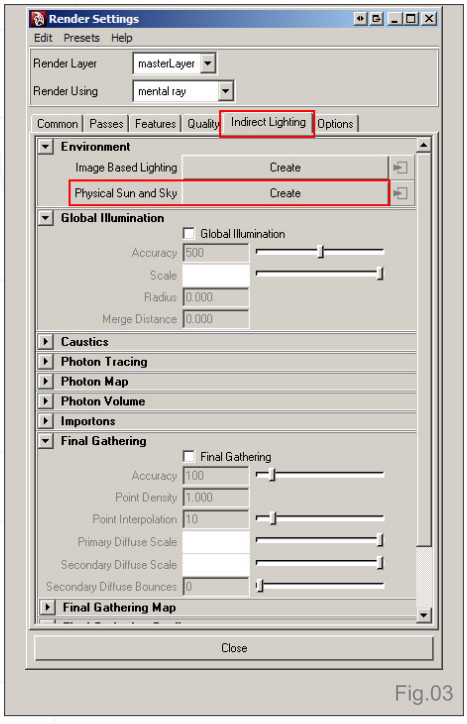
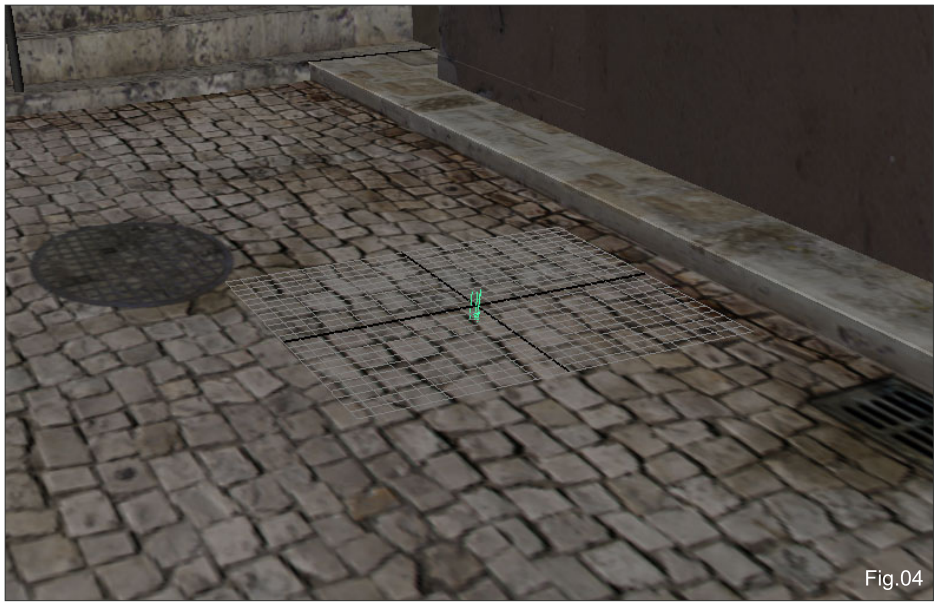


Fig.03


Fig.04

Since it's a direct light, the only thing that really matters is its orientation, so we can move and scale it as we want just to see it and select it better in the viewport. In **Fig.05** you can see the values used for its translation, rotation and scale. Just copy the rotation values, since our sun direction directly depends on these; change the scale values only if the light icon appears too small in the scene, and move the light in a place where it's easy to select.

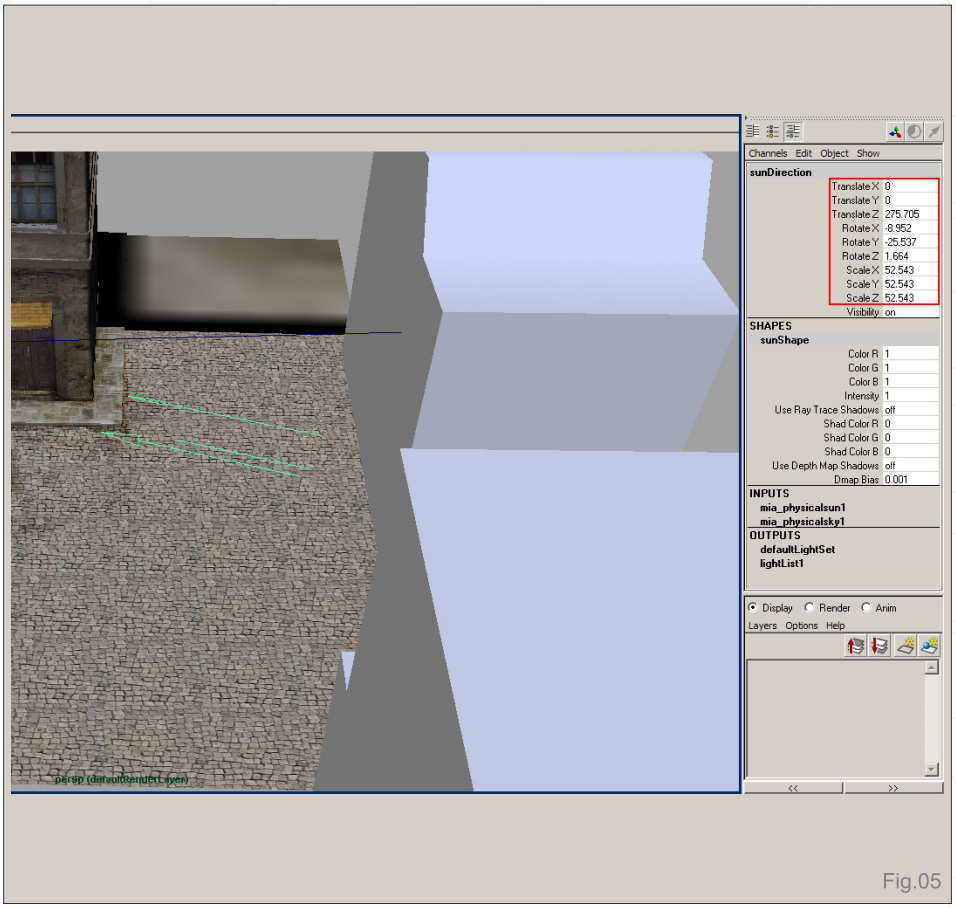


Fig.05

Let's open the Render View window and do a quick render (**Fig.06**). The Physical Sun and Sky gives us a nice start point to work with, but off course it does not all the job for us, so let's see how to improve the look of our rendering to create a nice sunset lighting.

The two main areas where we will be change settings and values are mia_physicalsky1 node and mia_physicalsun1. You can find them just selecting the sun direction light and opening the Attribute Editor (**Fig.07**).

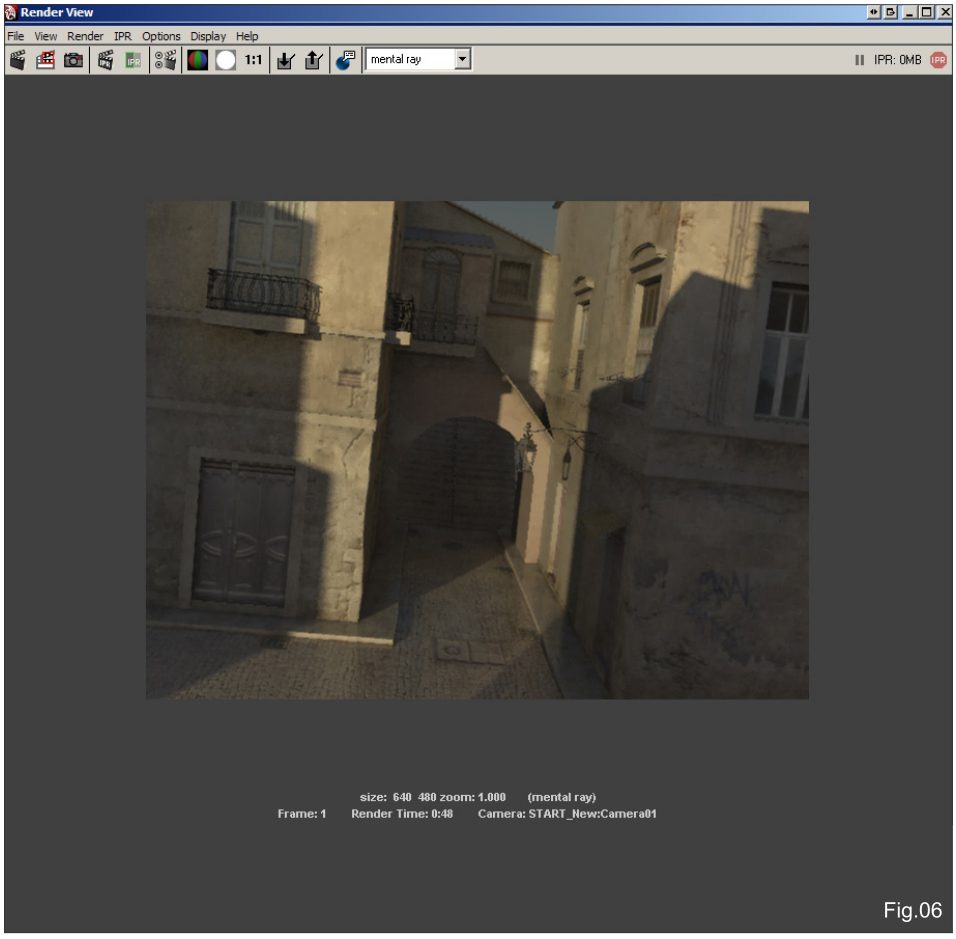


Fig.06

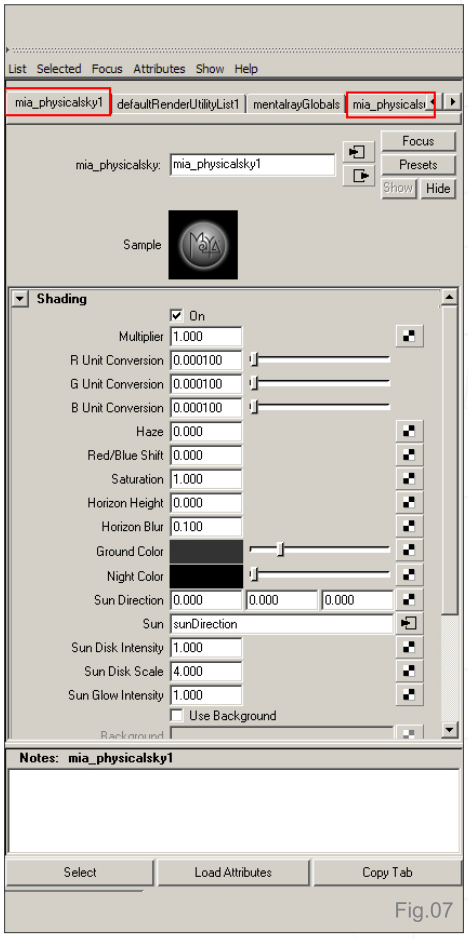


Fig.07

Use the mia_physicalsun1 node just to change the shadows softness as you wish.

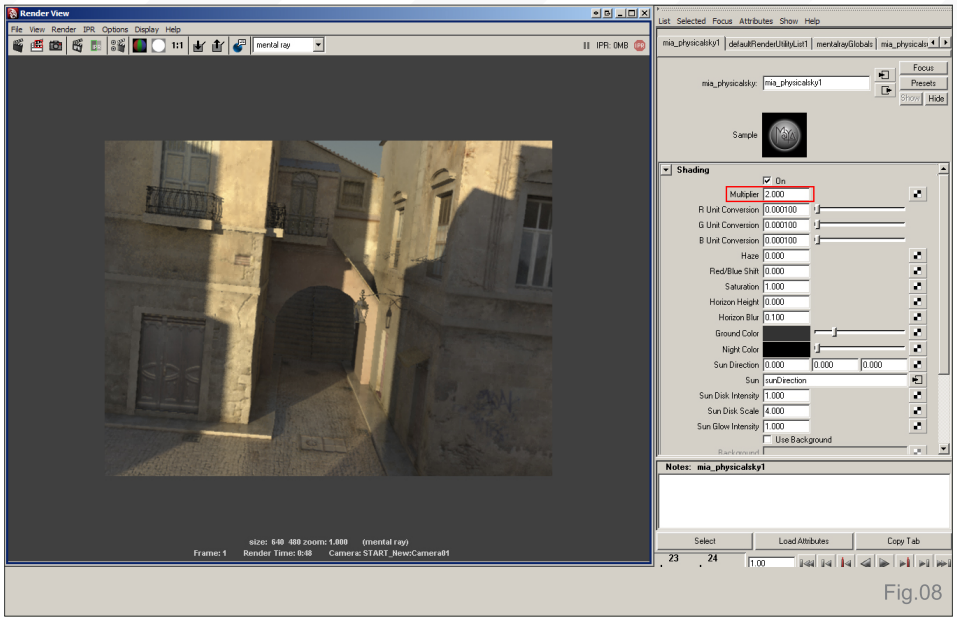
Let's start increasing the Multiplier value in the mia_physicalsky1 node and doing another quick render (**Fig.08**). Now there is greater light in the scene but colors are still quite dull.

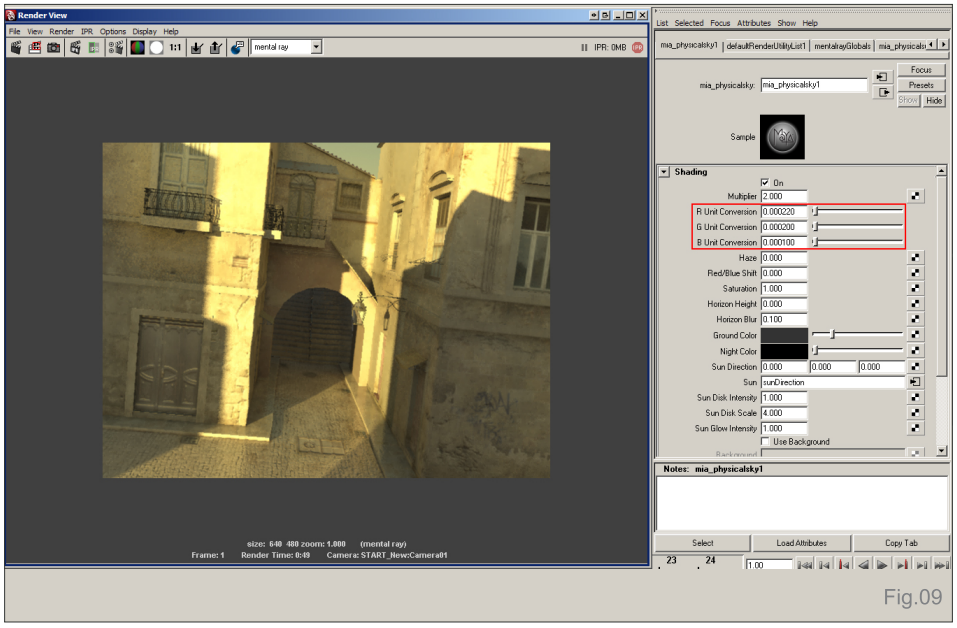
Change the R, G and B Unit Conversion values in the mia_physicalsky1 node as shown in **Fig.09**.

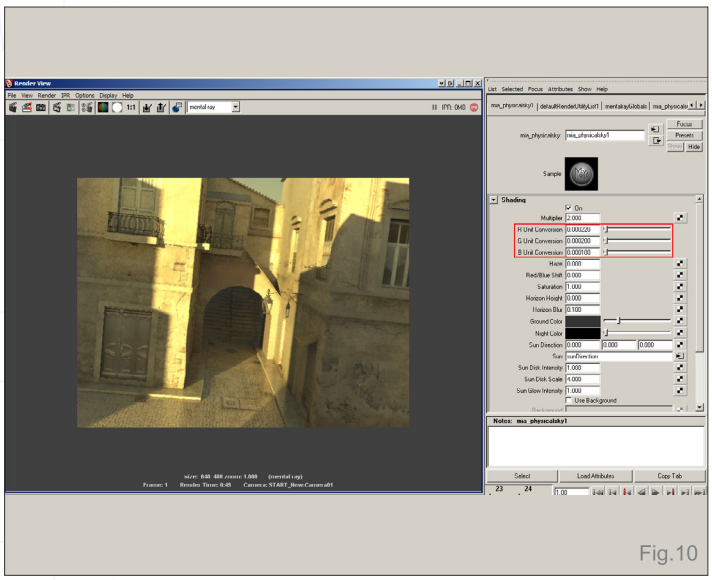
Now let's add a little bit of Haze (0.800) and decrease the Saturation value (0.750). Also, set the Horizon Height to 0.500 and change the Night Color to a blue-ish color (**Fig.10**).

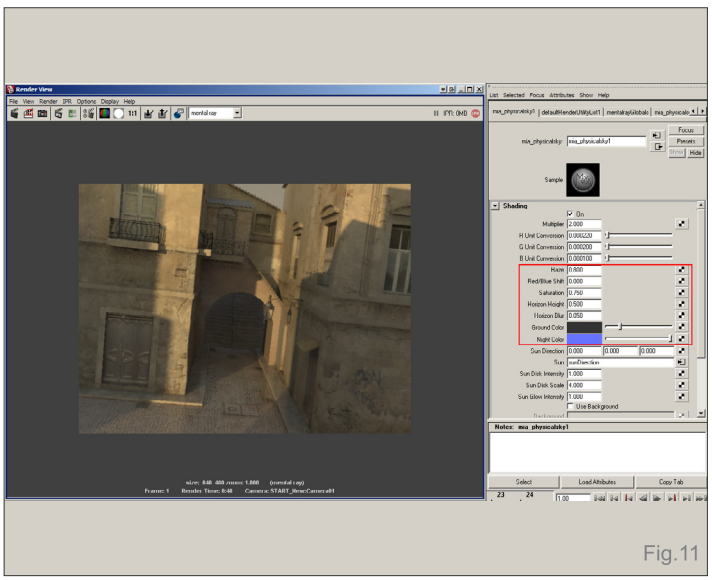
Another very important node while working with Physical Sun and Sky is mia_exposure_simple, which is created by default and attached to the Camera node. In mia_exposure_simple, change the values as shown in **Fig.11**.

The image will become darker and contrasted, but now we can increase the light intensity. Open the Render Settings panel and switch to the Indirect Lighting tab. Final Gather was activated by Physical Sun and Sky; set its Accuracy to 400, to have a better quality for the Final Gather solution. Also, set the Secondary Diffuse Bounces to 2. Click on the color box next to Primary Diffuse Scale and in the Color


Fig.08


Fig.09


Fig.10


Fig.11

Chooser window make sure that you are using HSV values (**Fig.12**). Set the V value to 2.

Now we need a second light source to create cold colors and shadows in the scene. Create a new Area Light and position/rotate/scale it as shown in **Fig.13**.

Open the Attribute Editor and change its Color to a bright blue. Also, decrease its intensity to 0.700 (**Fig.14**). We don't want it to have too much influence in the scene.

Now we're ready to do render our final color pass, so let's increase some values to have a better quality for the image. Open the Render

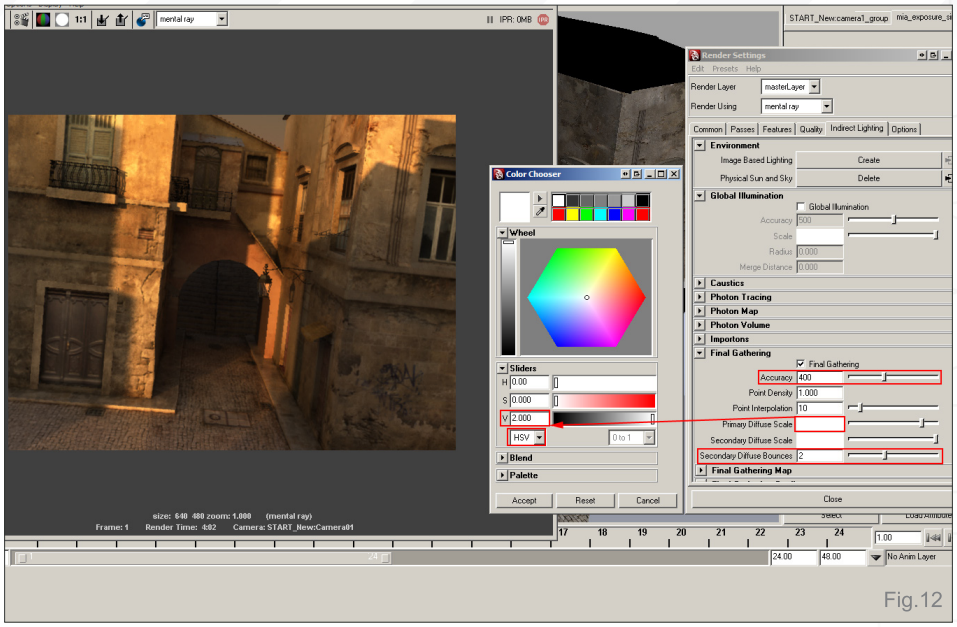
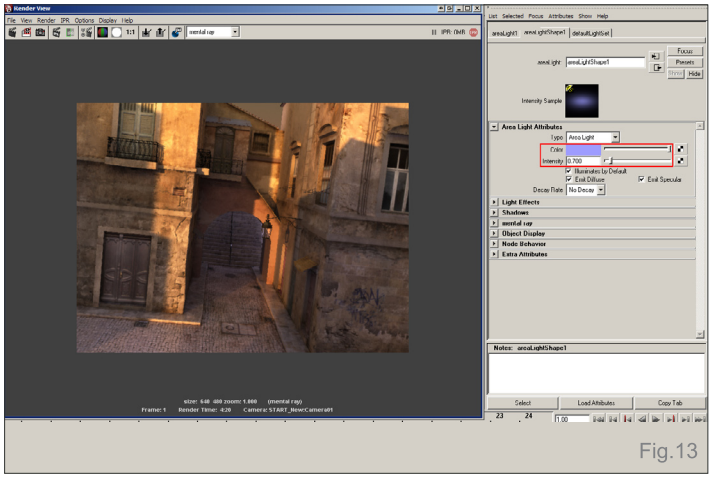
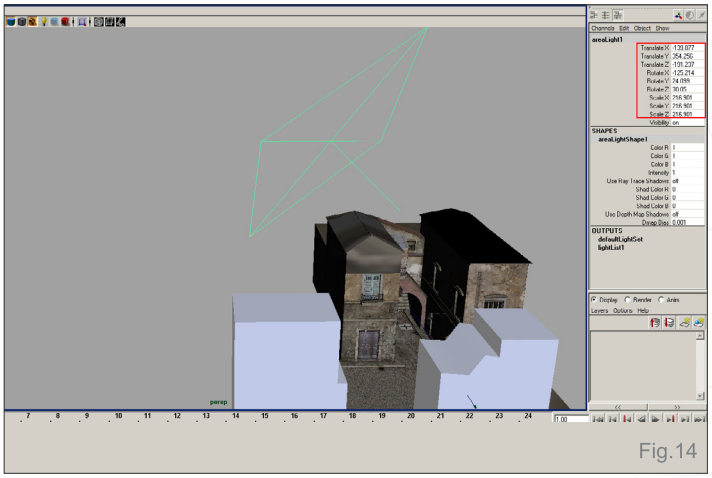


Fig.12


Fig.13


Fig.14

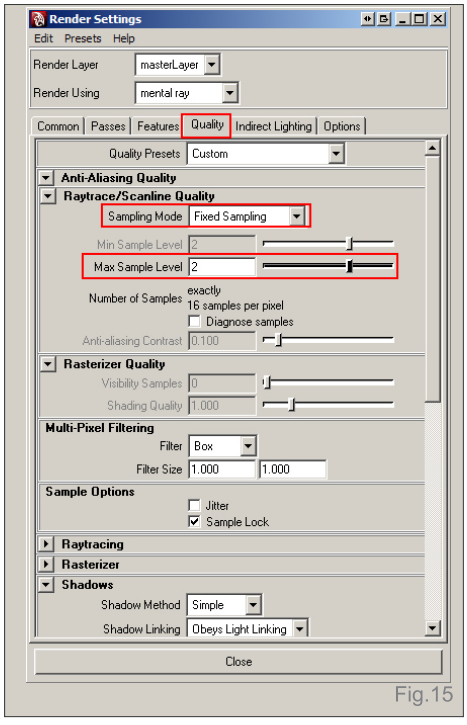


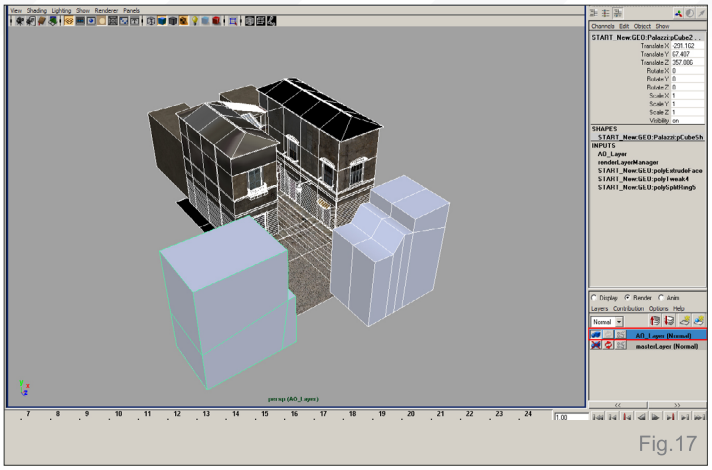
Fig.15


Fig.16

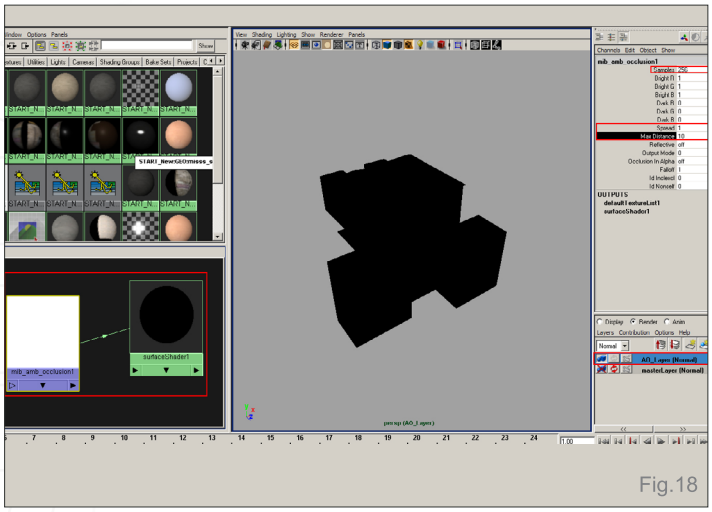
Settings window and switch to the Quality. In the Raytrace/Scanline area, set the Sampling Mode to Fixed Sampling and increase the Max Sample Level to 2 (**Fig.15**).

Render the scene and save the output as a TGA file (or any other file format with an alpha channel). (**Fig.16**).

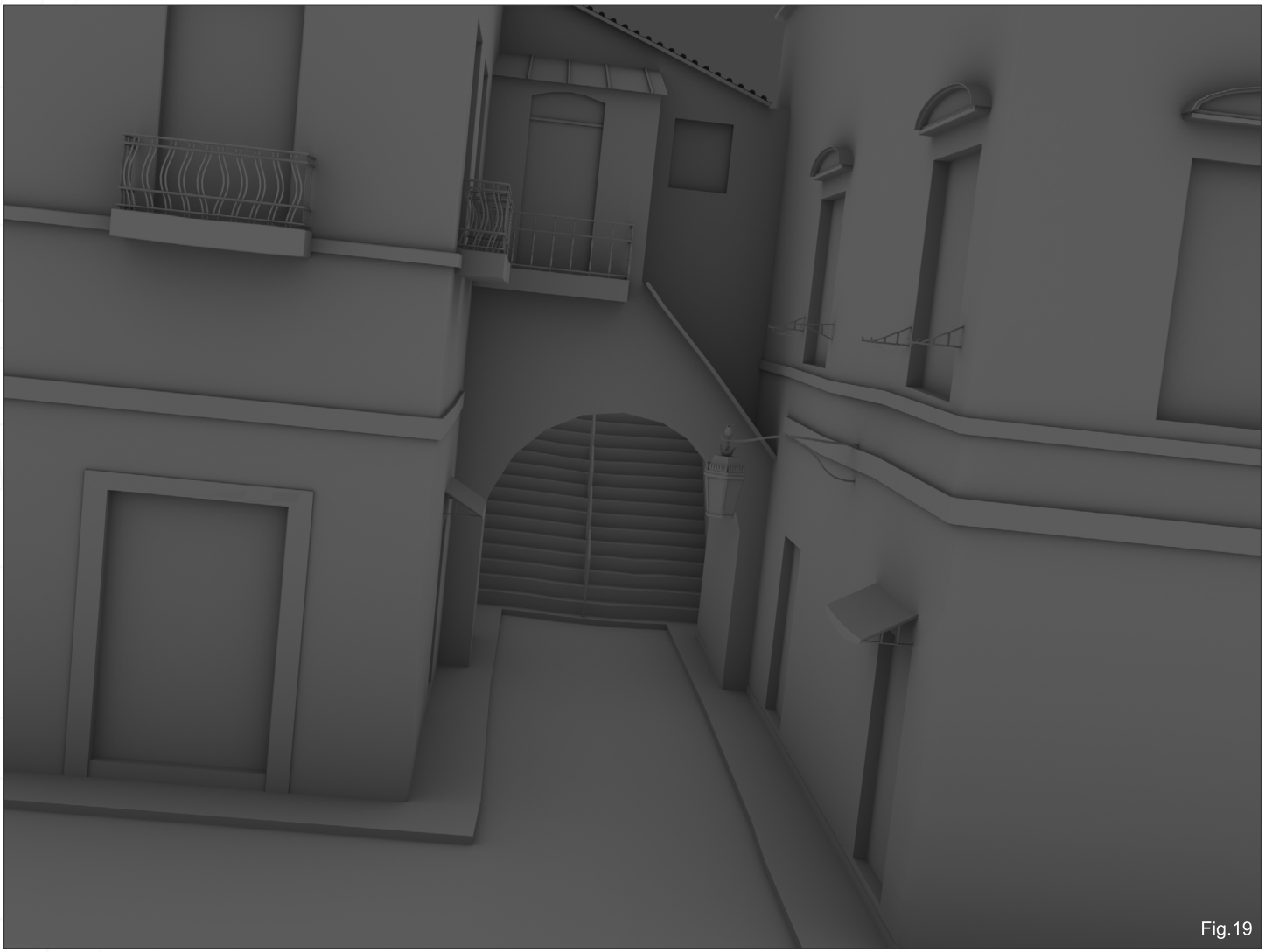
Now we need an Ambient Occlusion pass to composite it with the color pass in Photoshop. Select all the geometry in the scene and create a new render layer with the selected objects. Call it “AO_Layer” (**Fig.17**).


Fig.17

Open the HyperShade and create a new Maya Surface Shader, then create a new mental ray mib_amb_occlusion node and connect it to the surface Shader node. (just drag the mib_amb_occlusion1 node over the surfaceShader1 node and choose “Default”) (**Fig.18**). Right click on the AO_Layer render layer and choose Overrides / Assign Existing Material Override / and assign the ambient occlusion shader you just created to it.


Fig.18

Now render the scene and save the Ambient Occlusion pass as a TGA file (**Fig.19**).


Fig.19

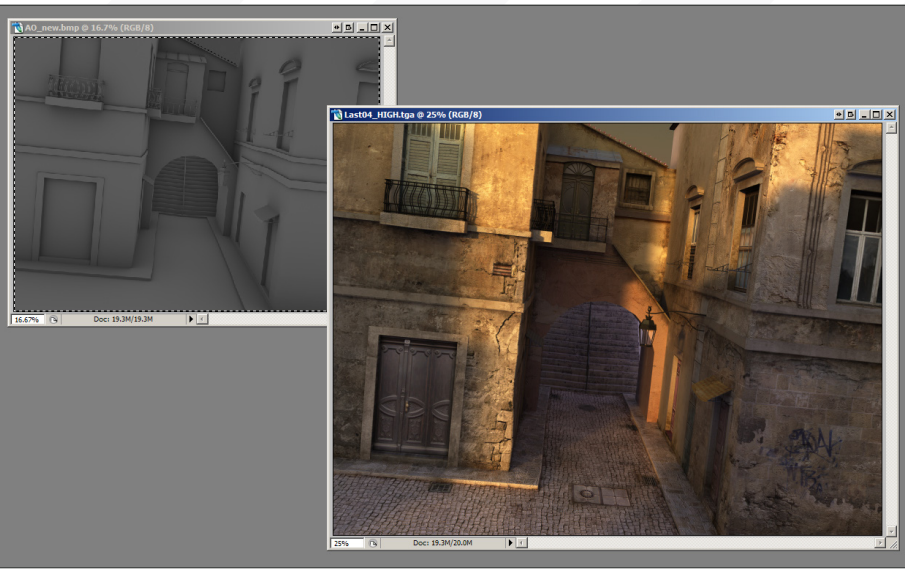


Fig.20

Now we can use Photoshop to composite the two passes and do some color correction and other stuff (**Fig.20**).

Open the Ambient Occlusion pass and paste it over the Color pass. Change its blending mode to Overlay and decrease its Opacity to about 35% (**Fig.21**).

Collapse the two layers together and duplicate the new layer with Ctrl + J. Use Hue/Saturation on the top layer to give it a warm, reddish color. You can also blur the picture a bit. Change the blending mode to Screen and decrease the Opacity to about 67% (**Fig.22**).

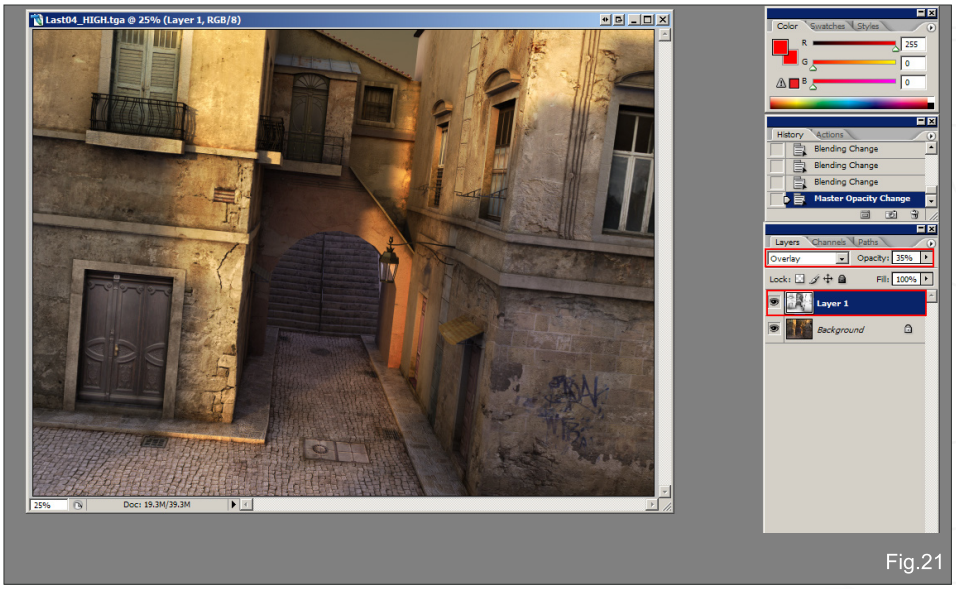


Fig.21

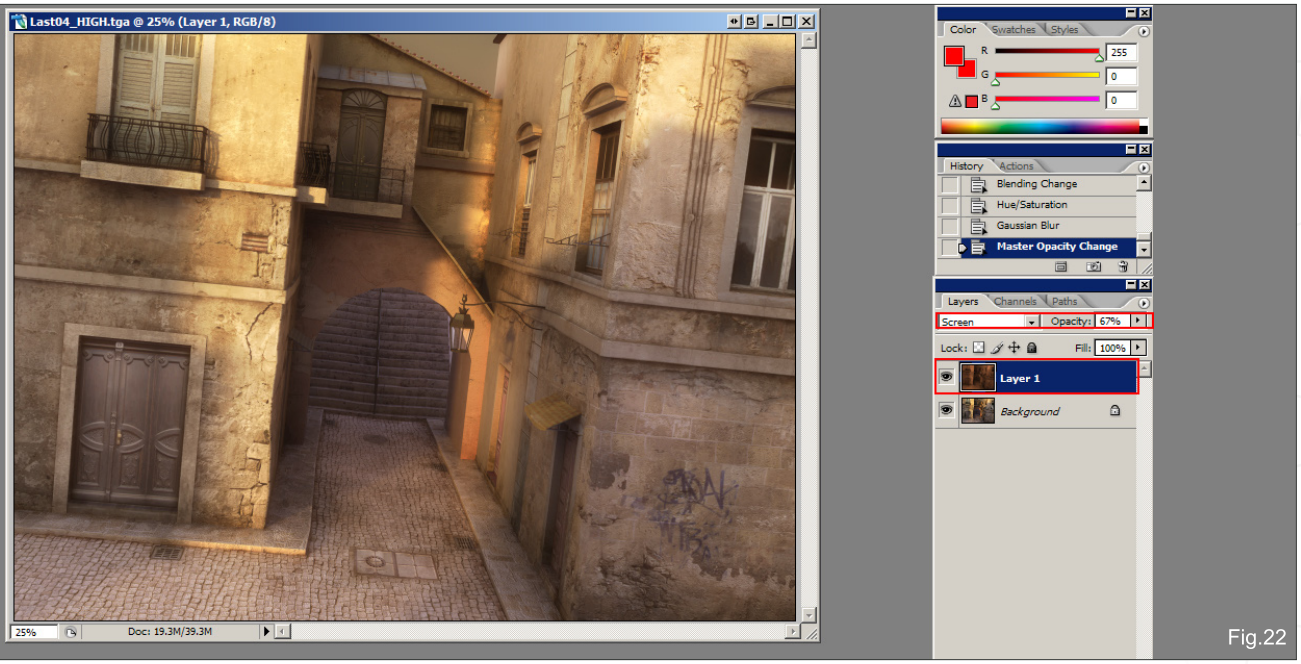


Fig.22

We lost our cold blue shadows, so let's get them back in using the Color Balance tool and pulling the Shadows slider slightly over Blue (**Fig.23**).

Since we saved both the color and ambient occlusion passes in TGA format, we already have the alpha channel; we can use this feature to paste a nice picture of a sunset sky in the background (**Fig.24**).

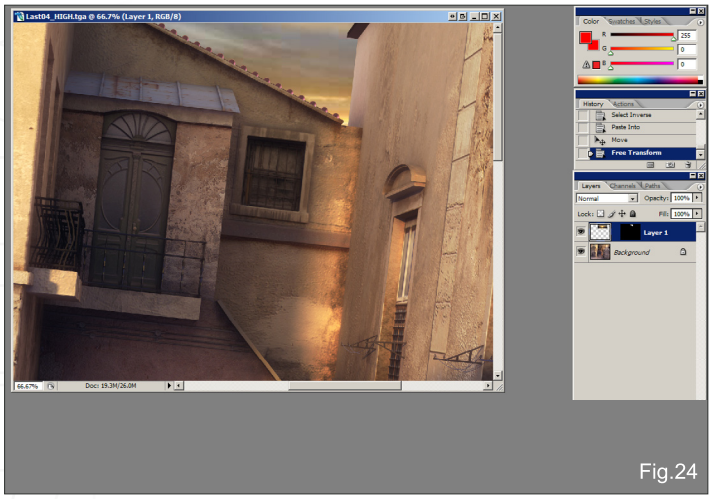


Fig.24

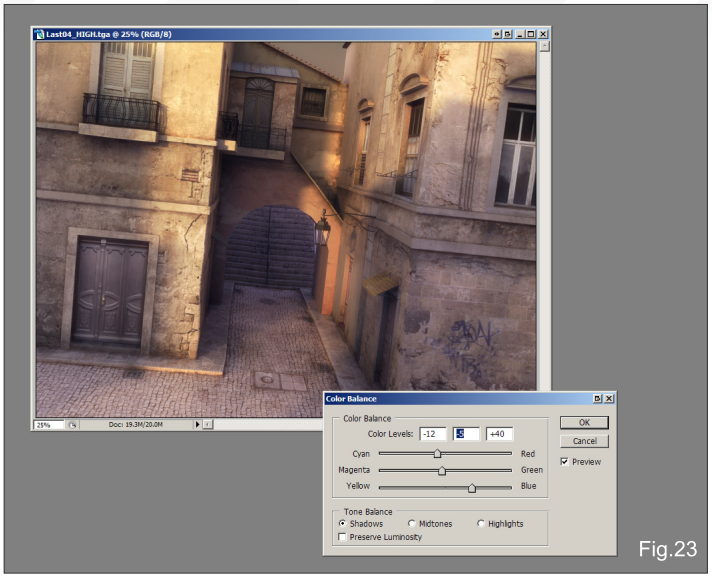


Fig.23

In **Fig.25** you can see the final picture for the sunset. Playing around with colors and Color Balance tool we can give a different look and mood to our rendering. For example, making everything colder we can make a nice sunrise (**Fig.26**).



Fig.25



Tutorial by:
LUCIANO IURINO
For more from this artist visit:
http://www.pmstudios.it
Or contact them:
iuri@pmstudios.it

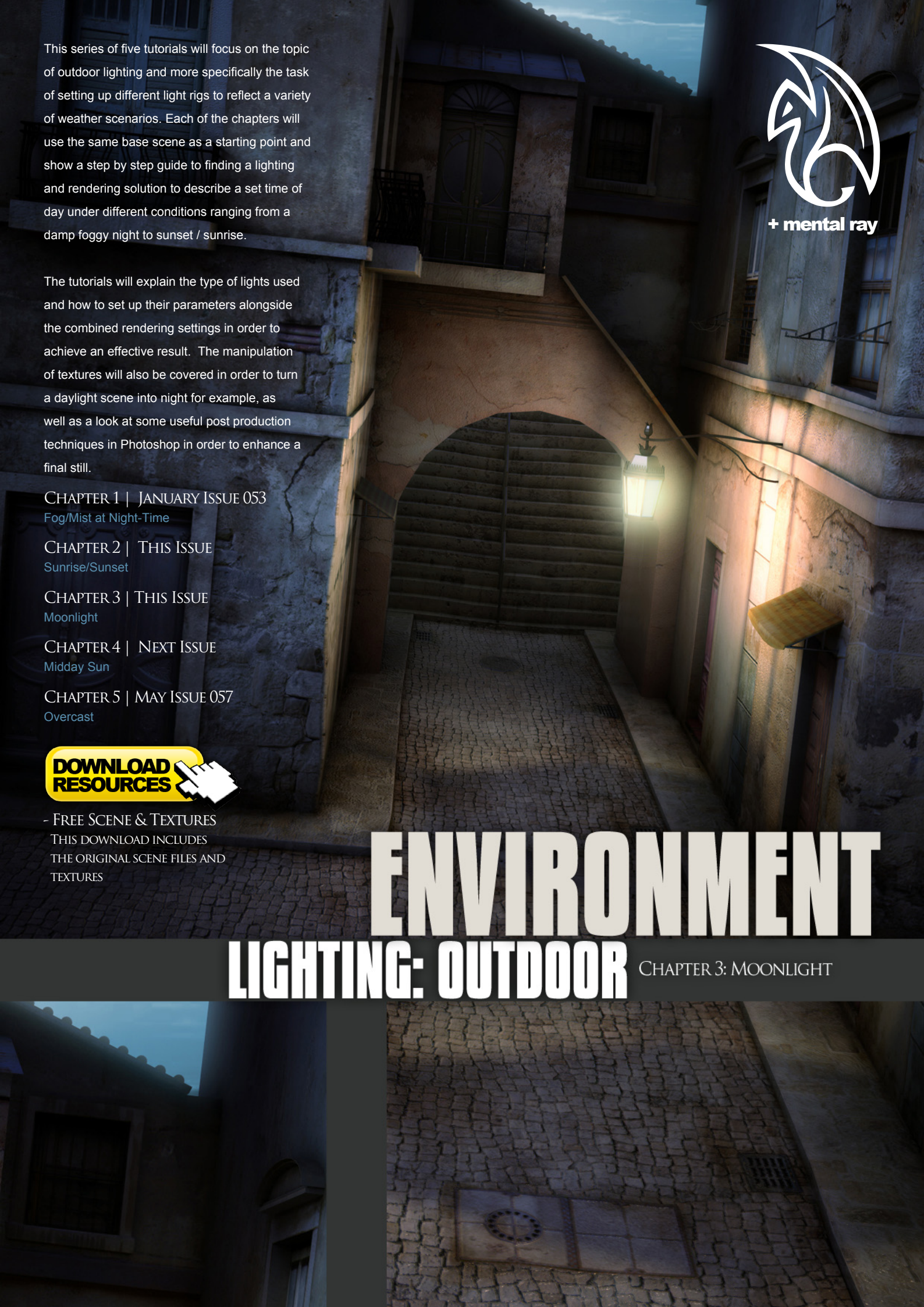
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Fig.26



This series of five tutorials will focus on the topic of outdoor lighting and more specifically the task of setting up different light rigs to reflect a variety of weather scenarios. Each of the chapters will use the same base scene as a starting point and show a step by step guide to finding a lighting and rendering solution to describe a set time of day under different conditions ranging from a damp foggy night to sunset / sunrise.

The tutorials will explain the type of lights used and how to set up their parameters alongside the combined rendering settings in order to achieve an effective result. The manipulation of textures will also be covered in order to turn a daylight scene into night for example, as well as a look at some useful post production techniques in Photoshop in order to enhance a final still.

Chapter 1 | January Issue 053
Fog/Mist at Night-Time

Chapter 2 | This Issue
Sunrise/Sunset

Chapter 3 | This Issue
Moonlight

Chapter 4 | Next Issue
Midday Sun

Chapter 5 | May Issue 057
Overcast

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+ mental ray

ENVIRONMENT
LIGHTING: OUTDOOR

Chapter 3: Moonlight

CHAPTER 3 - MOONLIGHT

Software Used: Maya + Mental Ray

Welcome to this new environment lighting tutorial. This time we will create a light rig for a nice moonlight scene.

Open the scene file. The starting scene is basically the same as for the sunset/sunrise tutorial (**Fig.01**), and in the same way we'll be using mental ray's Physical Sun and Sky feature to create the basic lighting.

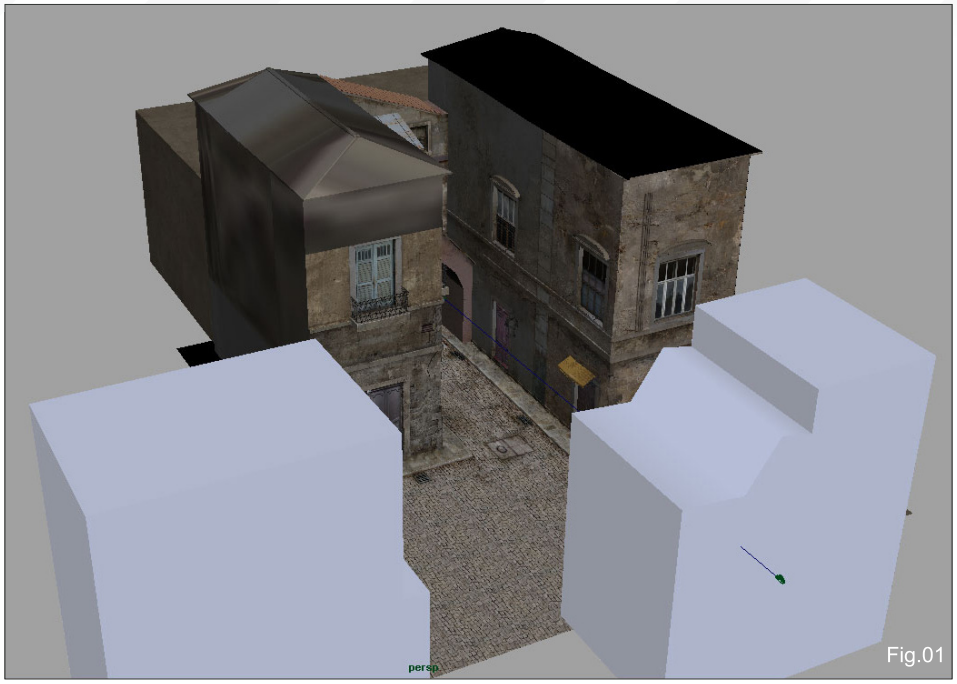


Fig.01

Open the Render Settings panel and choose mental ray as main renderer (**Fig.02**).

Switch to the Indirect Lighting tab and click on the Create button next to Physical Sun and Sky (**Fig.03**).

A new direct light will be created at the world's origin (**Fig.04**).


Fig.02

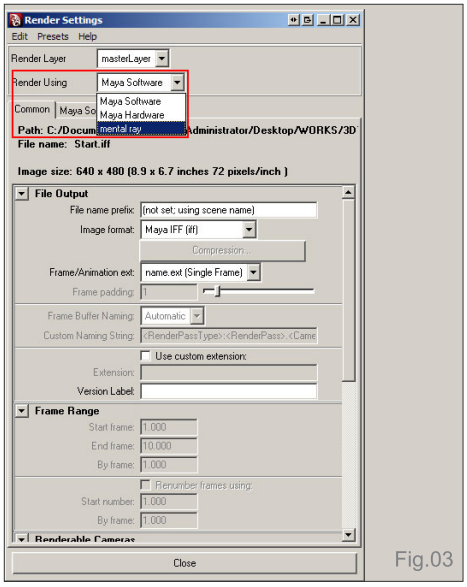


Fig.03

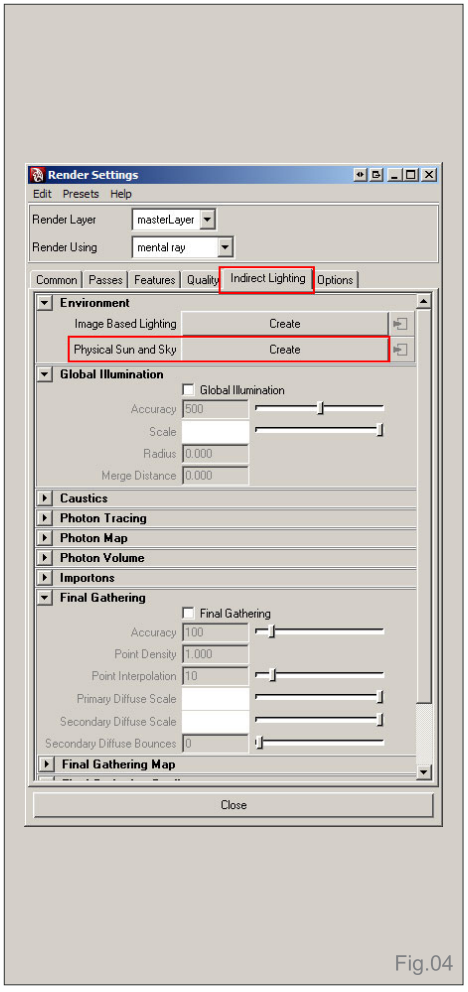


Fig.04

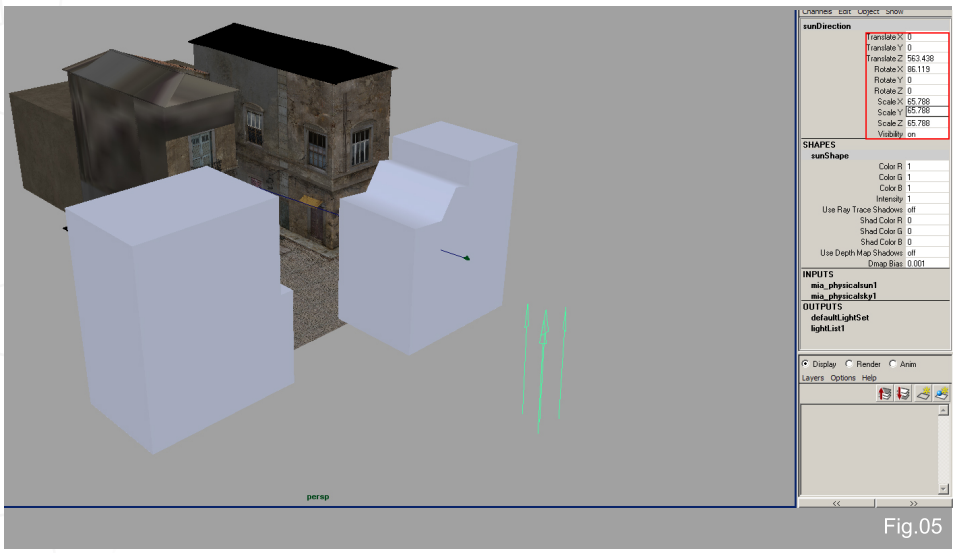


Fig.05

Let's move the direct light away from the origin, so we can better select it in the viewport, and let's scale it to see it better. Also, rotate the direct light with the values shown in **Fig.05**.

If we were render the scene at this point we would see that Physical Sun and Sky has created basic night lighting for us (**Fig.06**).

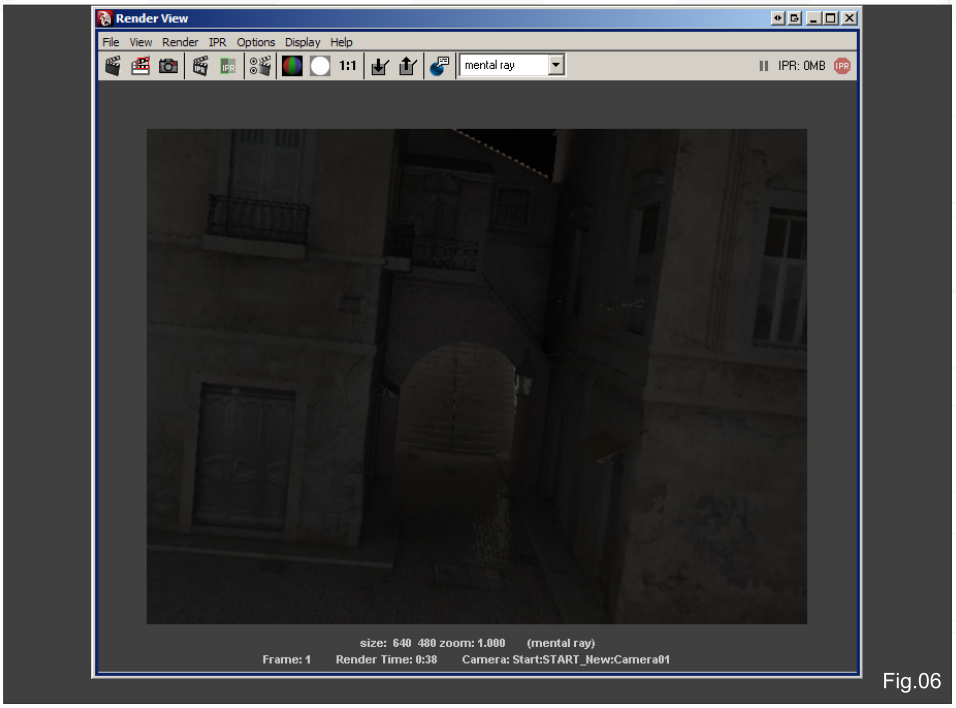


Fig.06

Open the Attribute Editor for the camera and search for the mia_physicalsky1 node. Change the B Unit Conversion value to 0.0003 as shown in **Fig.07**. Change the Night Color to a dark blue.

This time we will replace the mia_exposure_ simple node (created by default by Physical Sun and Sky) with the more powerful mia_ exposure_photographic. Open the HyperShade, switch to Cameras, right click on the camera you are using for the rendering and choose Graph Network. This way we'll see the whole node network connected to the camera. Search

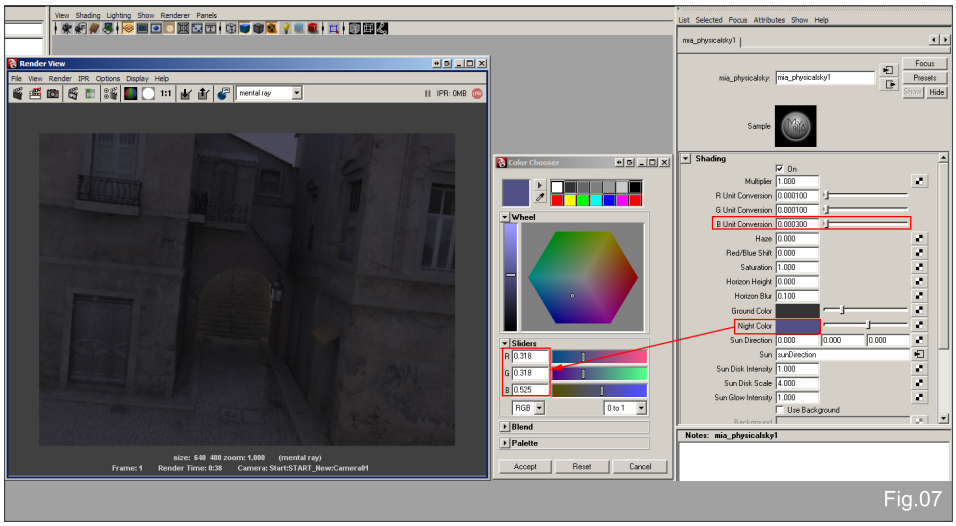


Fig.07

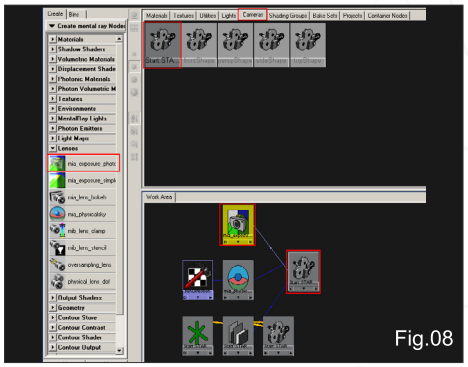


Fig.08

for the Lenses / mia_exposure_photographic node in the node list on the left and click on it to create one in the graph. Middle-click and drag the mia_exposure_photographic node over the camera node, and choose Default (**Fig.08**).

If you render the scene now, it will probably be all black. That's because we're using the new photographic exposure node, and it must be set accordingly to our scene scale and values. Some of you may find the mia_exposure_ photographic node's parameters familiar, since they reproduce some features of real world cameras (such as Film Iso, Camera Shutter, F-stop, etc.).

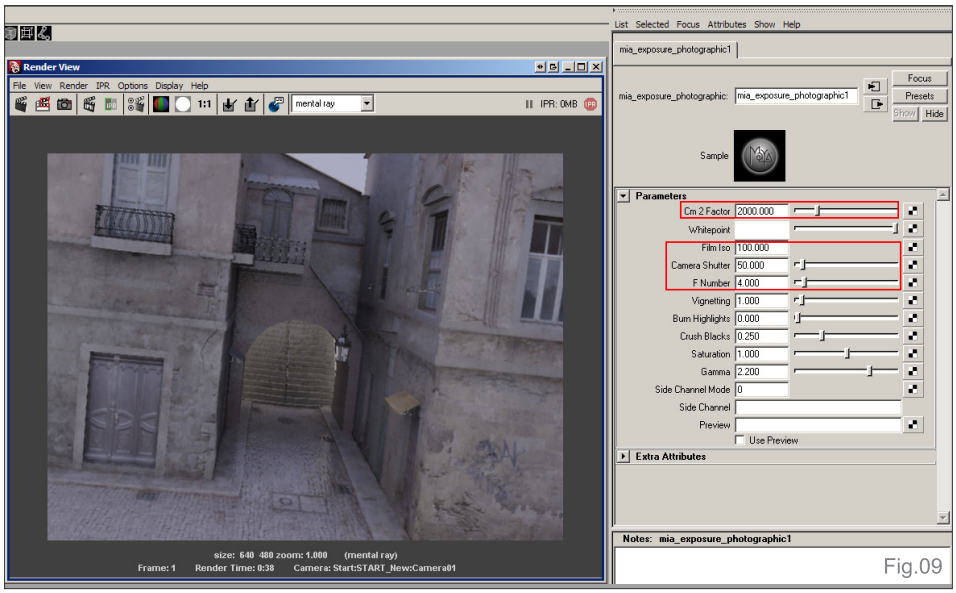
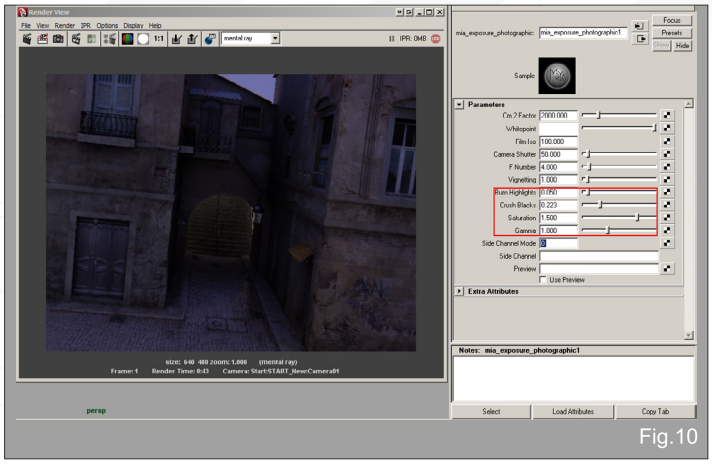
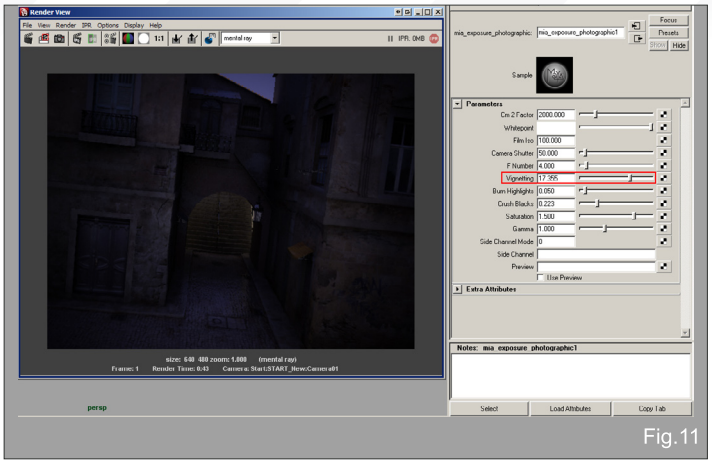


Fig.09

Open the attribute editor for the mia_exposure_ photographic node and change its settings as shown in **Fig.09**. Now render the scene again.

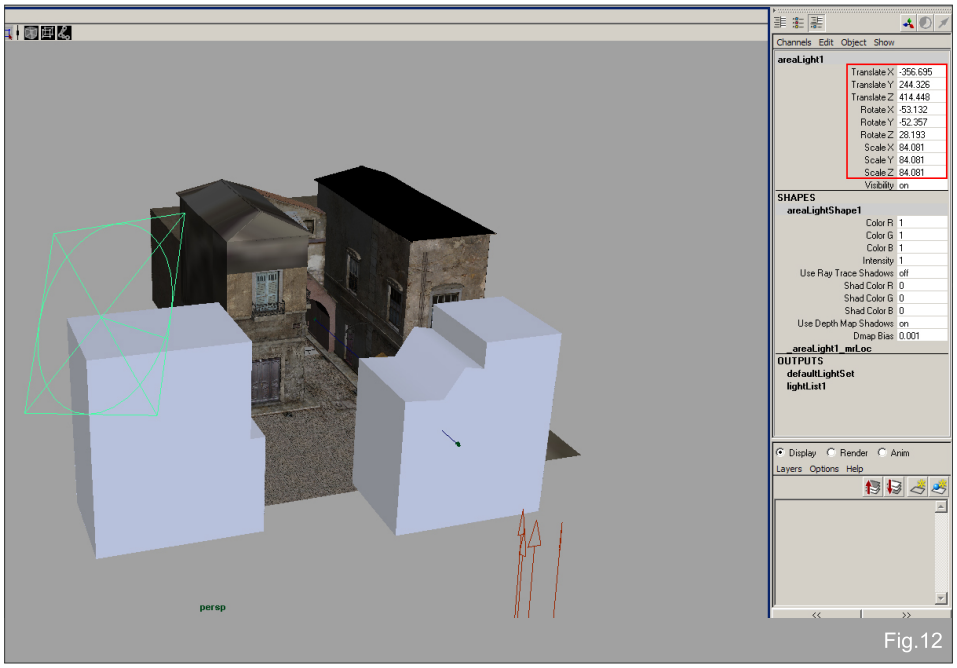

Fig.10

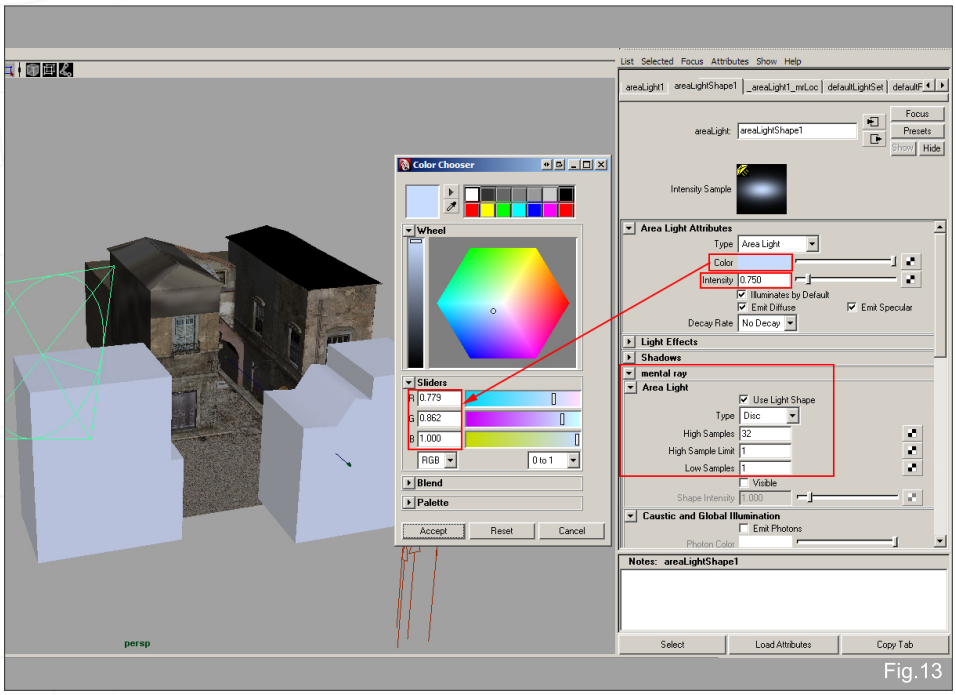

Fig.11

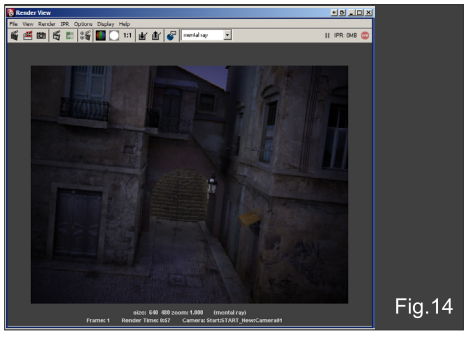
Change the Burn Highlights value to 0.050, the Crush Blacks value to 0.223, the Saturation value to 1.500 and bring down the Gamma value to 1.000 (**Fig.10**).

Now we'll use a cool feature of the mia_exposure_photographic node, the Vignetting effect. Change its value to about 17.355 and render again. As you may notice, now the corners of the picture are being darkened all the way to almost-black. This gives a really nice look to the image (**Fig.11**).

Now that we've set the global lighting and mood for the scene, we need to give the moon light more importance, so we need to create a new light source. Create an Area Light and set its


Fig.12


Fig.13


Fig.14

position/rotation/scale values like shown in **Fig.12**.

Open the Attribute Editor for the Area light and change its color to a pale blue. Also, change the Area light parameters as shown in **Fig.13**.

Render the scene again. Now we have a stronger moon light in the scene (**Fig.14**).



Fig.15

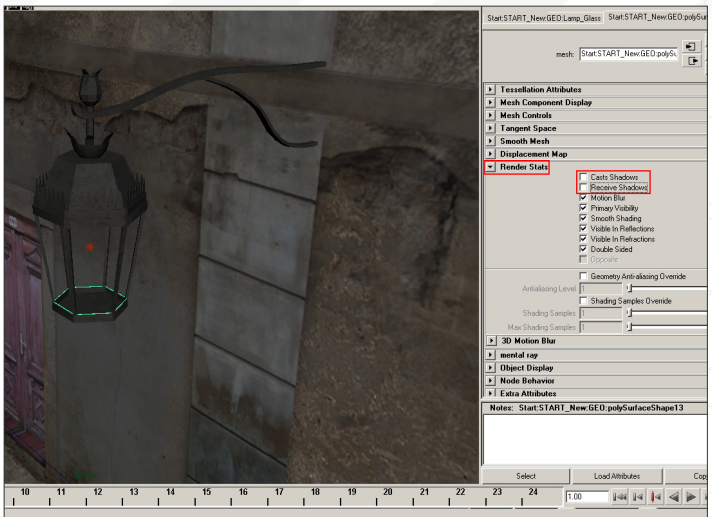


Fig.16

We also need one more light source to give our final look to the rendering. We'll use a Point light put inside the street lamp mesh. Create a new Point light and change its position parameters a shown in **Fig.15**.

Since we'll be casting shadows from this Point light, we don't want the glass part of the street lamp to cast shadows (we could use a cool mia_material to create realistic glass shadows, but we don't really need it in this case). Select the glass mesh, open the Attribute Editor, and in the Render Stats area disable Cast Shadows and Receive Shadows (**Fig.16**).

Go back to the Point light attributes and in the Mental Ray tab enable the Use mental ray shadow map overrides feature. Click on the Take Settings from Maya button, and increase the Samples values to 16. Also, make sure to increase the Softness a little bit (**Fig.17**).

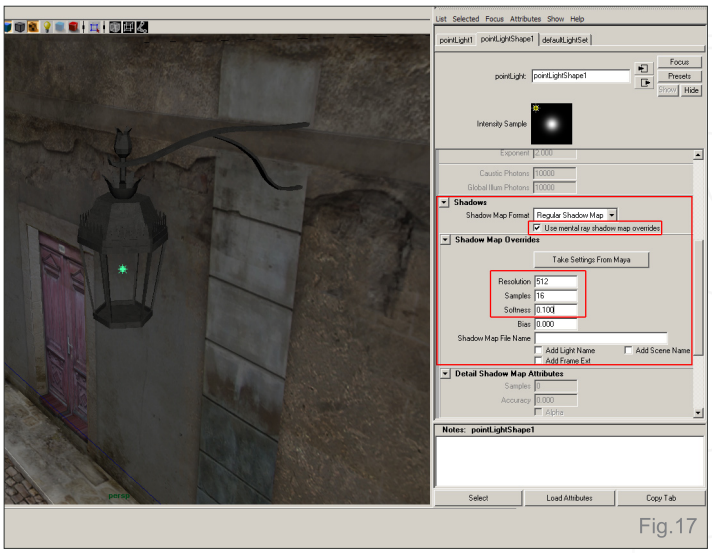


Fig.17

We'll be using another cool mental ray feature for the Point light's color: the mib_cie_d node. Using this node we can create realistic light behavior, using a single value to set the color to a warm one. Click on the button

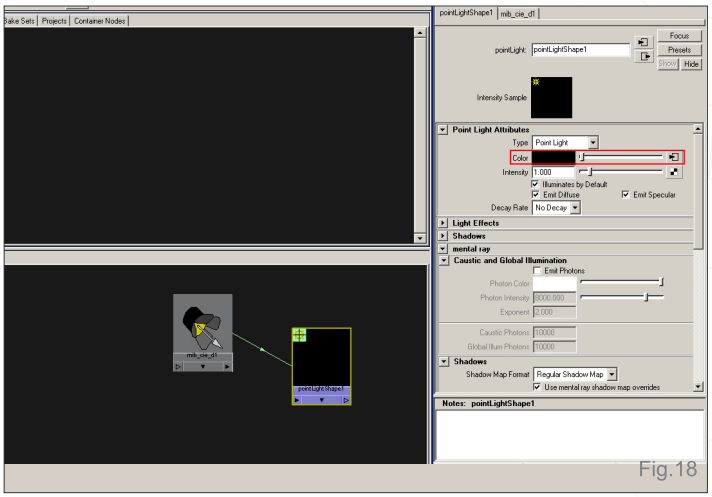


Fig.18

next to the Color value for the Point light and assign a mib_cie_d node to it (**Fig.18**).

Open the Attribute Editor for this node and set the Temperature value to about 4148. Set the Intensity value to 100 (**Fig.19**).

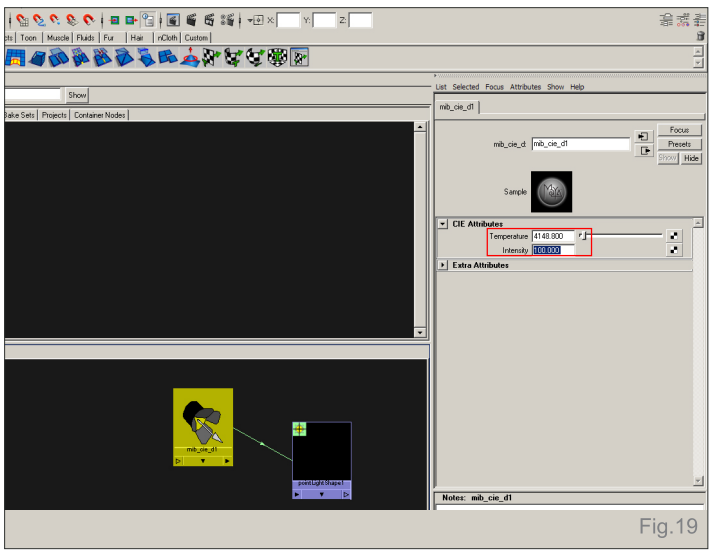


Fig.19

Now we can also control the global intensity of the light through the light's Intensity value. Set it to 30 and its Decay Rate to Quadratic (**Fig.20**).

Render the scene again and enjoy the street lamp's lighting in the scene, together with the light coming from the moon (**Fig.21**).

We need a little more global lighting, so open the Render Settings, switch to the Indirect Lighting tab and increase the Secondary Diffuse Bounces to 2 (**Fig.22**).

Now we're ready to render the final color pass. Switch to the Quality tab and set the Sampling Mode to Fixed Sampling. Set the Max Sample level to 2 (**Fig.23**).

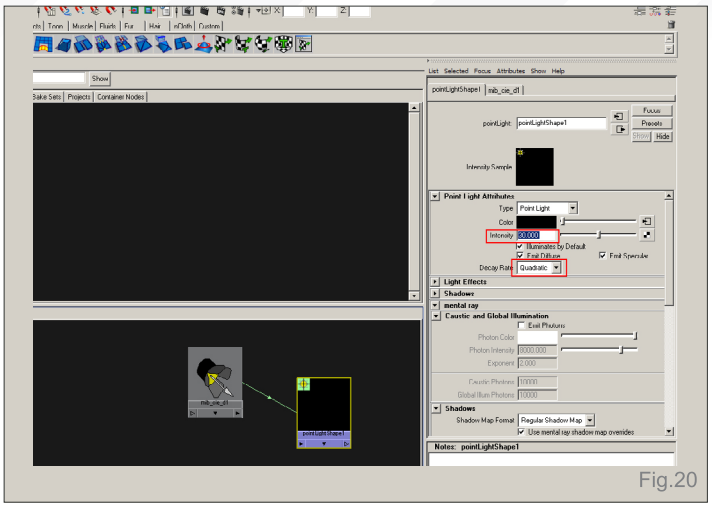


Fig.20

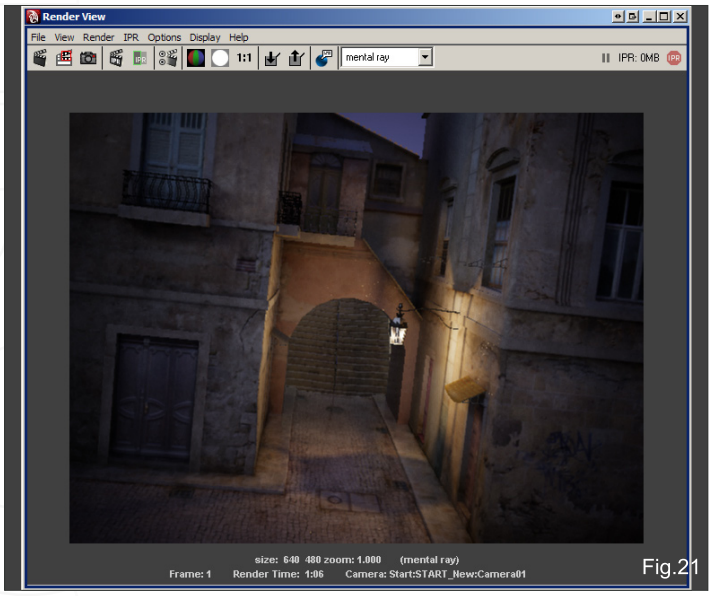
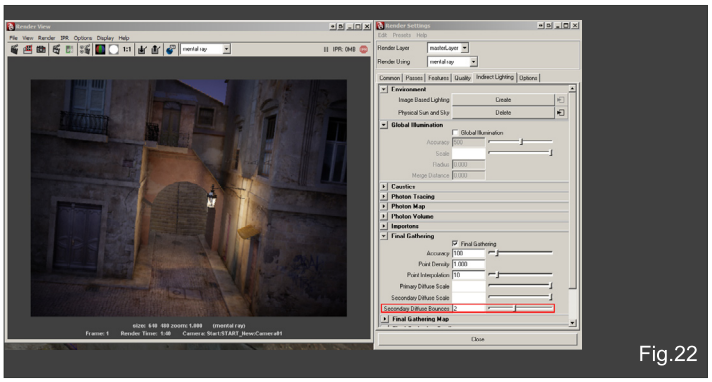


Fig.21


Fig.22

You can also add the Glow feature to the point light or to the glass material, but I prefer to do it in post-production with Photoshop. Set the desired picture size in the Common tab and render the scene. Make sure to save the picture in TGA format (or any other format with an alpha channel) (**Fig.24**).

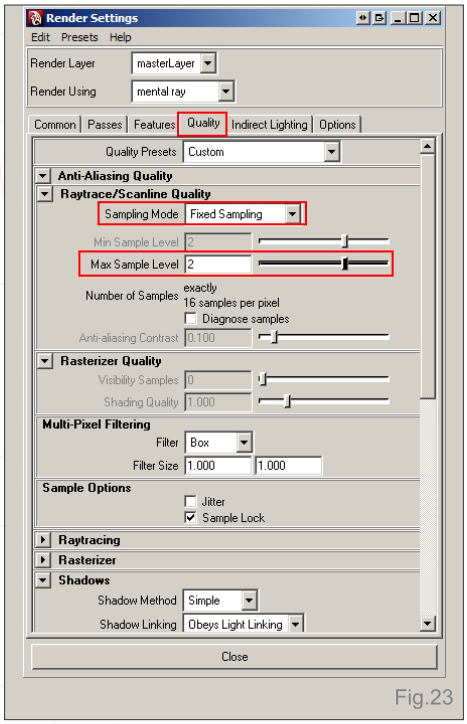
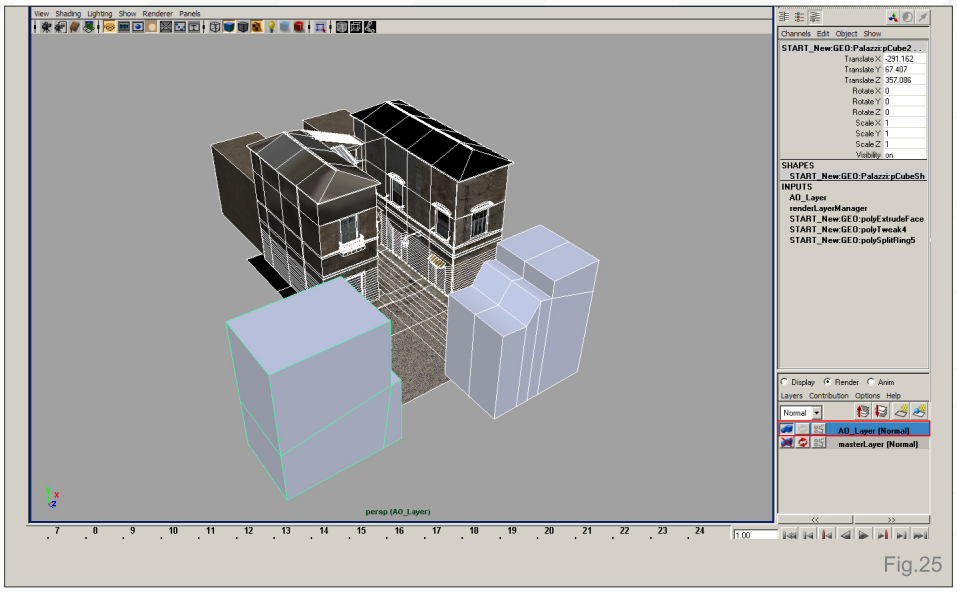


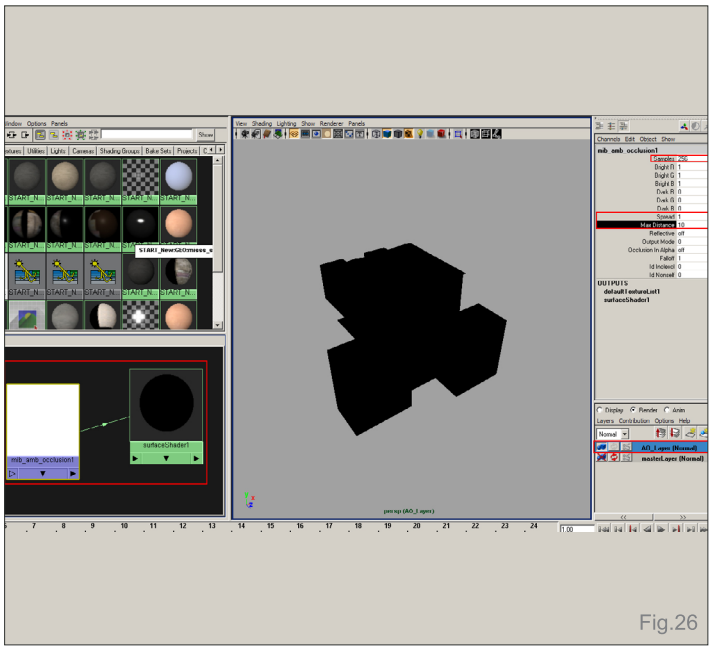
Fig.23

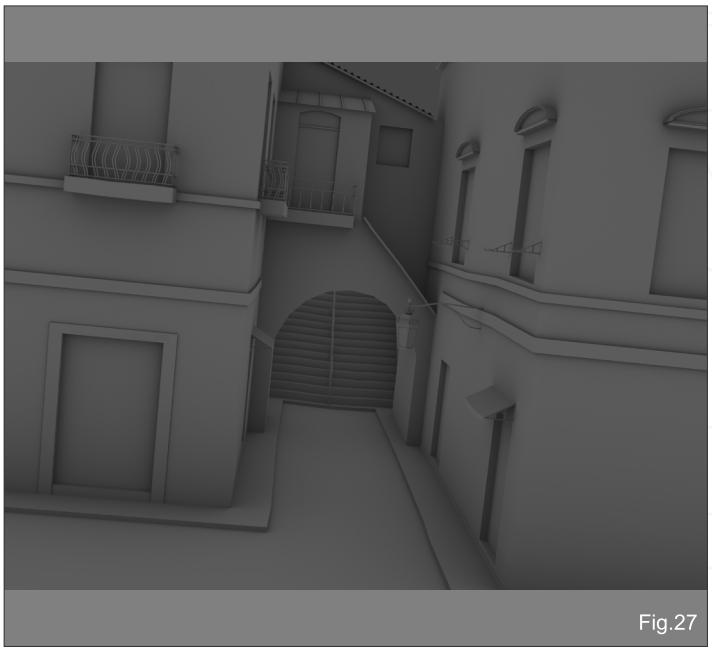

Fig.24

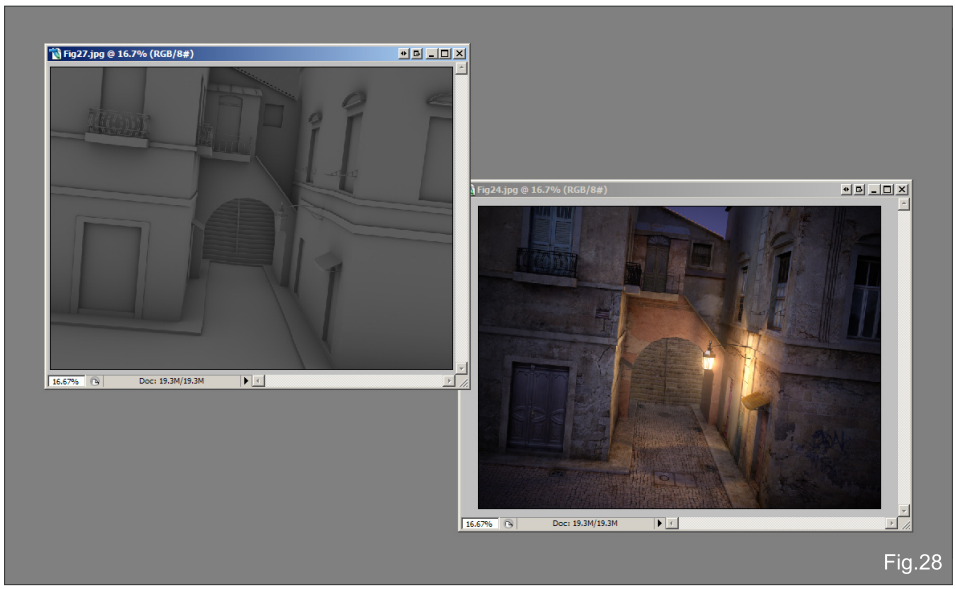
Before going on, we need an Ambient Occlusion pass for compositing reasons. Create a new render layer and call it AO_Layer. Assign all the geometry to this new rendering layer (**Fig.25**).


Fig.25

Open the Hyper Shade and create a new Maya Surface Shader, then create a new mental ray mib_amb_occlusion node and connect it to the surfaceShader node (just drag the mib_amb_occlusion1 node over the surfaceShader1 node and choose “Default”) (**Fig.26**). Right click on the AO_Layer render layer and choose Overrides / Assign Existing Material Override / and assign the ambient occlusion shader you just created to it.


Fig.26


Fig.27


Fig.28

Now render the scene and save the Ambient Occlusion pass as a TGA file (**Fig.27**).

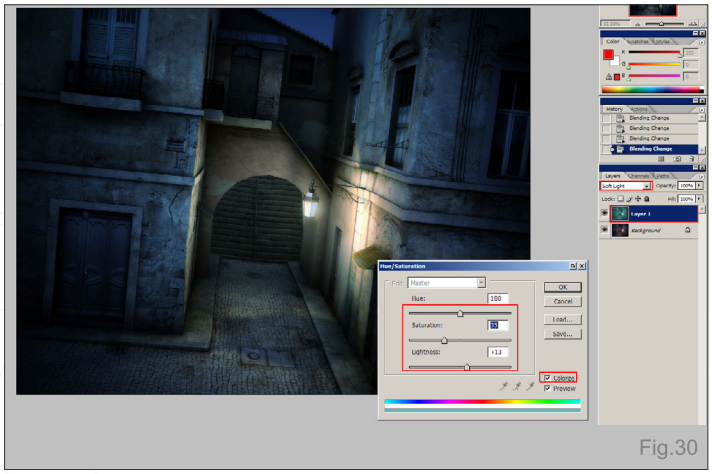
Now open both the color and AO pass in Photoshop (**Fig.28**).

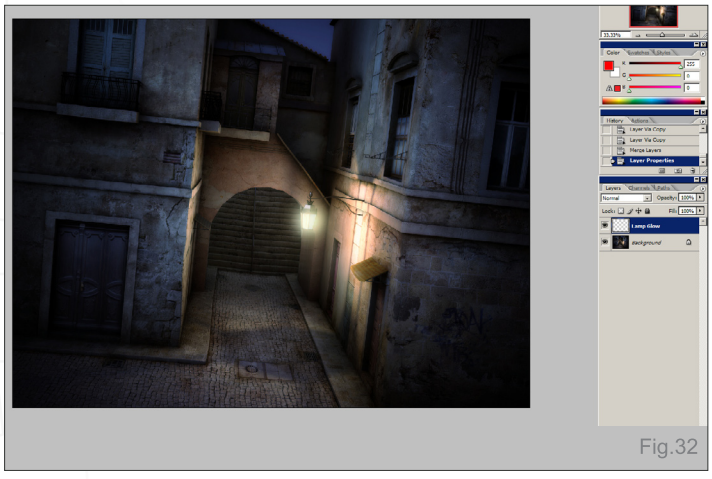
Copy and paste the AO pass over the color one. Change the AO layer’s blending mode to multiply and its Opacity to about 74% (**Fig.29**).

Collapse the two layers together. Duplicate the new base layer, blur it with Gaussian Blur and use the Hue/Saturation to set the new layer’s color to a cold blue (**Fig.30**). Also, change the blending mode to Soft Light.

Use the Color Balance tool to bring the highlights back to a warmer color. You can use the same tool to enhance the shadows color (**Fig.31**).

There are several ways to create the glow for the street lamp. Someone may prefer to do it in Maya itself, just like stated earlier. Someone else may do it using the powerful render passes feature in Maya, and store in a new picture all the areas that need glow. Lastly, you can also do it in Photoshop, just selecting areas that need glow, duplicating them on another layer, blurring them, and changing the blending mode to make it brighter over the background (**Fig.32**).


Fig.30


Fig.32

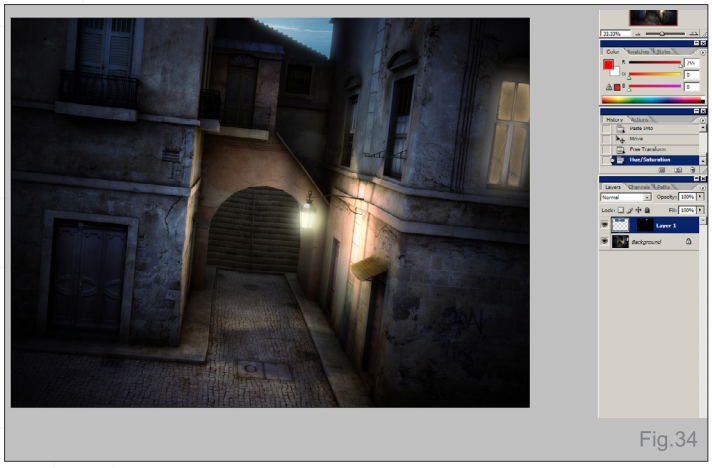

Fig.34


Fig.29

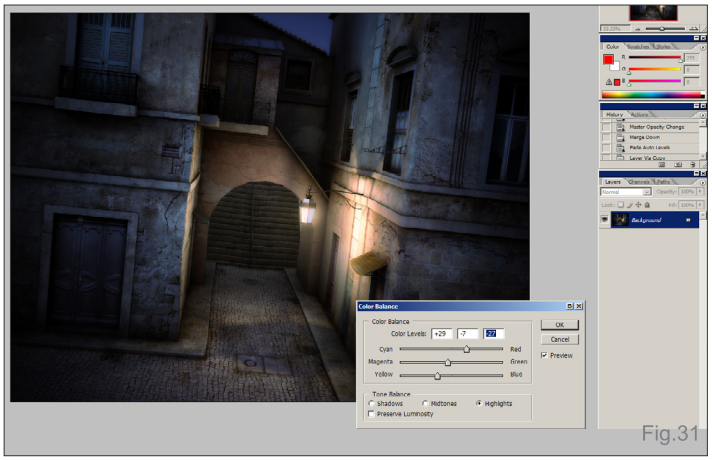

Fig.31


Fig.33

You can do the same thing for one of the windows (**Fig.33**).

Since we saved both the color and ambient occlusion passes in TGA format, we already have the alpha channel; we can use this feature to paste a nice picture of a night sky in the background (**Fig.34**).

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